10/644,244 EAST

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	593	((514/260.1) or (514/264.1)).CCLS.	US-PGPUB; USPAT	OR	OFF	2005/11/01 14:47
L2	1060	((544/278) or (544/279)).CCLS.	US-PGPUB; USPAT	OR	OFF	2005/11/01 14:47
L3	1313	L1 or L2	US-PGPUB; USPAT	OR	OFF	2005/11/01 14:47
L4	190	L3 and (thieno or pyrimido)	US-PGPUB; USPAT	OR	OFF	2005/11/01 14:48

10/ 644,244

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Welcome to STN International! Enter x:x

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PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	JUL 20	Powerful new interactive analysis and visualization software, STN AnaVist, now available
NEWS	4	AUG 11	STN AnaVist workshops to be held in North America
NEWS	5	AUG 30	CA/CAplus -Increased access to 19th century research documents
NEWS	6	AUG 30	CASREACT - Enhanced with displayable reaction conditions
NEWS	7	SEP 09	ACD predicted properties enhanced in REGISTRY/ZREGISTRY
NEWS	8	OCT 03	MATHDI removed from STN
NEWS	9	OCT 04	CA/CAplus-Canadian Intellectual Property Office (CIPO) added to core patent offices
NEWS	10	OCT 06	STN AnaVist workshops to be held in North America
NEWS	11	OCT 13	New CAS Information Use Policies Effective October 17, 2005
NEWS	12	OCT 17	STN(R) AnaVist(TM), Version 1.01, allows the export/download of CAplus documents for use in third-party analysis and visualization tools
NEWS	13	OCT 27	Free KWIC format extended in full-text databases
NEWS	14	OCT 27	DIOGENES content streamlined
NEWS	15	OCT 27	EPFULL enhanced with additional content

NEWS EXPRESS	JUNE 13 CURRENT WINDOWS VERSION IS V8.0, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005
NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS INTER	General Internet Information
NEWS LOGIN	Welcome Banner and News Items
NEWS PHONE	Direct Dial and Telecommunication Network Access to STN
NEWS WWW	CAS World Wide Web Site (general information)

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* * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 10:47:31 ON 01 NOV 2005

=> file reg
COST IN U.S. DOLLARS SINCE FILE TOTAL

10/ 644,244

	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 10:48:14 ON 01 NOV 2005

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 30 OCT 2005 HIGHEST RN 866393-44-4
DICTIONARY FILE UPDATES: 30 OCT 2005 HIGHEST RN 866393-44-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

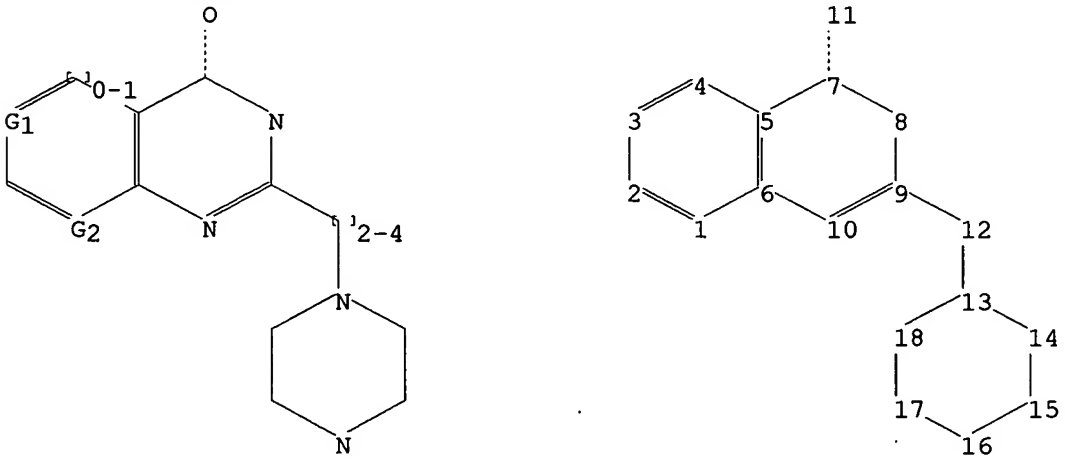
****
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
****

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=>
Uploading C:\Program Files\Stnexp\Queries\10644244.str



chain nodes :
11 12

ring nodes :
1 2 3 4 5 6 7 8 9 10 13 14 15 16 17 18
chain bonds :
7-11 9-12 12-13
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 8-9 9-10 13-14 13-18 14-15 15-16
16-17 17-18
exact/norm bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-10 7-8 7-11 8-9 9-10 9-12 12-13
exact bonds :
13-14 13-18 14-15 15-16 16-17 17-18
isolated ring systems :
containing 1 : 13 :

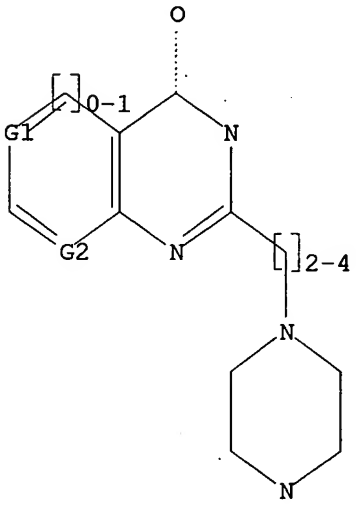
G1:S,N

G2:C,N

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:CLASS 12:CLASS 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom

L1 STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1 STR



G1 S,N
G2 C,N

Structure attributes must be viewed using STN Express query preparation.

=> s l1 sample
SAMPLE SEARCH INITIATED 10:48:37 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1484 TO ITERATE

```
100.0% PROCESSED     1484 ITERATIONS                                 0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        27370 TO    31990
PROJECTED ANSWERS:               0 TO        0

L2            0 SEA SSS SAM L1

=> s l1 full
FULL SEARCH INITIATED 10:48:44 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    30283 TO ITERATE

100.0% PROCESSED    30283 ITERATIONS                                 1 ANSWERS
SEARCH TIME: 00.00.01

L3            1 SEA SSS FUL L1

=> file hcaplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   161.76     161.97

FILE 'HCAPLUS' ENTERED AT 10:49:23 ON 01 NOV 2005
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FILE COVERS 1907 - 1 Nov 2005  VOL 143 ISS 19
FILE LAST UPDATED: 31 Oct 2005  (20051031/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d his

     (FILE 'HOME' ENTERED AT 10:47:31 ON 01 NOV 2005)

     FILE 'REGISTRY' ENTERED AT 10:48:14 ON 01 NOV 2005
L1              STRUCTURE UPLOADED
L2            0 S L1 SAMPLE
L3            1 S L1 FULL

     FILE 'HCAPLUS' ENTERED AT 10:49:23 ON 01 NOV 2005

=> s l3
L4            1 L3
```

L4 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN

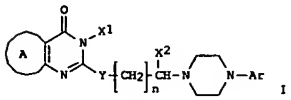
ACCESSION NUMBER: 2005:979639 HCAPLUS
DOCUMENT NUMBER: 143:286443
TITLE: Preparation of pyrimidine derivatives as 5-HT3 receptor antagonists having agonistic activity on 5-HT1A
INVENTOR(S): Sato, Michitaka; Matsui, Teruaki; Asagarasu, Akira; Hayashi, Hiroyuki; Araki, Seiichi; Yamaoki, Satoru; Takahashi, Nobuyuki; Yamauchi, Yukinao; Yamamoto, Yoshiko; Yamamoto, Norio; Ogawa, Chisato
PATENT ASSIGNEE(S): Teikoku Hormone Mfg. Co., Ltd., Japan
SOURCE: PCT Int. Appl., 261 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005082887	A1	20050909	WO 2005-JP3691	20050225

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: JP 2004-52040 A 20040226
JP 2004-322858 A 20041105

GI



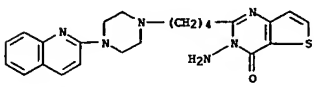
I

II

AB Title compds. I [ring A = carbocyclic group, etc.; X1 = H, amino, etc.; X2 = H, alkyl; Y = bond, etc.; n = 0-4; Ar = optionally substituted II with halo, etc.; Z = O, etc.; B = moiety required for completing mono-, ploy-heterocyclic ring contg. N together with N-C-Z; dotted line indicates single, double bond] were prepd. For example, treatment of potassium 3-amino-5,6-dimethyl-4-oxo-3,4-dihydrothieno[2,3-d]pyrimidine-2-thiolate with 2-[4-(3-chloropropyl)piperazin-1-yl]quinoline, e.g., prepd. from piperazine in 2 steps, afforded 3-amino-5,6-dimethyl-2-[3-(4-quinolin-2-ylpiperazin-1-yl)propylthio]-3H-thieno[2,3-d]pyrimidin-4-one (III) in 50% yield. In 5-HT3 receptor affinity assay (in vitro), compd. III exhibited the antagonistic activity of 94% at 10-7 M. Compds. I are claimed useful for the treatment of anxiety, depression, etc. Formulation is given.

IT 864386-12-9P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pyrimidine derivs. as 5-HT3 receptor antagonists having agonistic activity on 5-HT1A for treatment of anxiety, depression, etc.)

RN 864386-12-9 HCAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 3-amino-2-[4-[4-(2-quinolinyl)-1-piperazinyl]butyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
=> file caold
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         7.39     169.36

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)              SINCE FILE      TOTAL
                                                           ENTRY    SESSION
CA SUBSCRIBER PRICE                                        -0.73      -0.73

FILE 'CAOLD' ENTERED AT 10:50:00 ON 01 NOV 2005
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FILE COVERS 1907-1966
FILE LAST UPDATED:  01 May 1997 (19970501/UP)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.  Title keywords, authors, patent
  assignees, and patent information, e.g., patent numbers, are
  now searchable from 1907-1966.  TIFF images of CA abstracts
  printed between 1907-1966 are available in the PAGE
  display formats.

  New CAS Information Use Policies, enter HELP USAGETERMS for details.

  This file supports REGlstRY for direct browsing and searching of
  all substance data from the REGISTRY file.  Enter HELP FIRST for
  more information.

=> d his

     (FILE 'HOME' ENTERED AT 10:47:31 ON 01 NOV 2005)

     FILE 'REGISTRY' ENTERED AT 10:48:14 ON 01 NOV 2005
L1                STRUCTURE UPLOADED
L2            0 S L1 SAMPLE
L3            1 S L1 FULL

     FILE 'HCAPLUS' ENTERED AT 10:49:23 ON 01 NOV 2005
L4            1 S L3

     FILE 'CAOLD' ENTERED AT 10:50:00 ON 01 NOV 2005

=> s l3
L5            0 L3

=> file reg
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.43     169.79

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)              SINCE FILE      TOTAL
                                                           ENTRY    SESSION
CA SUBSCRIBER PRICE                                         0.00      -0.73

FILE 'REGISTRY' ENTERED AT 10:50:34 ON 01 NOV 2005
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10/ 644,244

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 30 OCT 2005 HIGHEST RN 866393-44-4
DICTIONARY FILE UPDATES: 30 OCT 2005 HIGHEST RN 866393-44-4

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TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

```
**********************************************************************
*                                                                    *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                                    *
**********************************************************************
```

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

```
=> s thieno[3,2-d]pyrimidin
        207839 THIENO
         49103 3,2-D
        609834 PYRIMIDIN
L6        8670 THIENO[3,2-D]PYRIMIDIN
                 (THIENO(W)3,2-D(W)PYRIMIDIN)

=> s pyrimido[4,5-d]pyrimidin?
         56693 PYRIMIDO
         32066 4,5-D
       1022879 PYRIMIDIN?
L7        3367 PYRIMIDO[4,5-D]PYRIMIDIN?
                 (PYRIMIDO(W)4,5-D(W)PYRIMIDIN?)

=> s l6 and l7
L8           0 L6 AND L7

=> s l6 or l7
L9       12037 L6 OR L7

=> s l9 and (piperaz?)
```

10/ 644,244

```
        621290 PIPERAZ?
L10        439 L9 AND (PIPERAZ?)

=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                      33.49     203.28

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                       0.00      -0.73

FILE 'CAPLUS' ENTERED AT 10:52:05 ON 01 NOV 2005
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FILE COVERS 1907 - 1 Nov 2005  VOL 143 ISS 19
FILE LAST UPDATED: 31 Oct 2005  (20051031/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/infopolicy.html

=> d his

     (FILE 'HOME' ENTERED AT 10:47:31 ON 01 NOV 2005)

     FILE 'REGISTRY' ENTERED AT 10:48:14 ON 01 NOV 2005
L1             STRUCTURE UPLOADED
L2           0 S L1 SAMPLE
L3           1 S L1 FULL

     FILE 'HCAPLUS' ENTERED AT 10:49:23 ON 01 NOV 2005
L4           1 S L3

     FILE 'CAOLD' ENTERED AT 10:50:00 ON 01 NOV 2005
L5           0 S L3

     FILE 'REGISTRY' ENTERED AT 10:50:34 ON 01 NOV 2005
L6        8670 S THIENO[3,2-D]PYRIMIDIN
L7        3367 S PYRIMIDO[4,5-D]PYRIMIDIN?
L8           0 S L6 AND L7
L9       12037 S L6 OR L7
L10        439 S L9 AND (PIPERAZ?)
```

10/ 644,244

FILE 'CAPLUS' ENTERED AT 10:52:05 ON 01 NOV 2005

=> s l10
L11 65 L10

=> d l11 1- ibib abs hitstr
YOU HAVE REQUESTED DATA FROM 65 ANSWERS - CONTINUE? Y/(N):y

L11 ANSWER 1 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:1004719 CAPLUS
DOCUMENT NUMBER: 143:286448
TITLE: Preparation of fused bicyclic pyrimidine compounds as cathepsin K inhibitors
INVENTOR(S): Ohmoto, Kazuyuki; Hisaichi, Katsuya; Okuma, Motohiro; Tanaka, Makoto; Kawada, Naoki
PATENT ASSIGNEE(S): Ono Pharmaceutical Co., Ltd., Japan
SOURCE: PCT Int. Appl., 168 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005085210	A1	20050915	WO 2005-JP4580	20050309

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

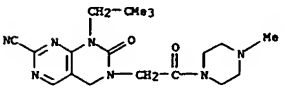
PRIORITY APPLN. INFO.: JP 2004-68212 A 20040310
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

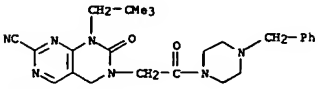
AB Title compds. I [ring A = carbocycle, heterocycle; ring B = heterocycle having at least one nitrogen; dotted line indicates single or double bond.; Y, Z = C, N; n = 0-10; R = H, substituent; further details on R are given.] were prepared For example, reaction of 5-(aminomethyl)-4-[(2,2-dimethylpropyl)amino]-2-pyrimidinecarbonitrile, e.g., prepared from 2,4-dichloro-5-(chloromethyl)pyrimidine in 4 steps, with N,N'-carbonyldiimidazole afforded compound II. In cathepsin K inhibition assays, the IC50 value of compound III was 2.9 nM. Compds. I are claimed useful for the treatment of osteoporosis, arthritis, etc. Formulations are given.

IT 864439-06-5P, 8-(2,2-Dimethylpropyl)-6-[2-(4-methylpiperazinyl)-2-oxoethyl]-7-oxo-5,6,7,8-tetrahydropyrimido[4,5-d]pyrimidine-2-carbonitrile 864439-07-6P, 6-[2-(4-Benzyl-1-piperazinyl)-2-oxoethyl]-8-(2,2-dimethylpropyl)-7-oxo-5,6,7,8-tetrahydropyrimido[4,5-d]pyrimidine-2-carbonitrile
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of fused bicyclic pyrimidine compds. as cathepsin K inhibitors

L11 ANSWER 1 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
for treatment of osteoporosis, arthritis, etc.)
RN 864439-06-5 CAPLUS
CN INDEX NAME NOT YET ASSIGNED



RN 864439-07-6 CAPLUS
CN INDEX NAME NOT YET ASSIGNED



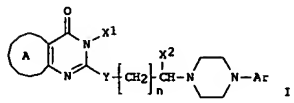
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:979639 CAPLUS
DOCUMENT NUMBER: 143:286443
TITLE: Preparation of pyrimidine derivatives as 5-HT3 receptor antagonists having agonistic activity on 5-HT1A
INVENTOR(S): Sato, Michitaka; Matsui, Teruaki; Asagarasu, Akira; Hayashi, Hiroyuki; Araki, Seiichi; Tamaoki, Satoru; Takahashi, Nobuyuki; Yamauchi, Yukinao; Yamamoto, Yoshiko; Yamamoto, Norio; Ogawa, Chisato
PATENT ASSIGNEE(S): Teikoku Hormone Mfg. Co., Ltd., Japan
SOURCE: PCT Int. Appl., 261 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

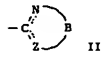
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005082887	A1	20050909	WO 2005-JP3691	20050225

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: JP 2004-52040 A 20040226
JP 2004-322858 A 20041105
GI



I



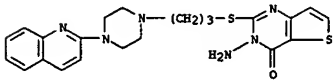
II

AB Title compds. I [ring A = carbocyclic group, etc.; X1 = H, amino, etc.; X2 = H, alkyl; Y = bond, etc.; n = 0-4; Ar = optionally substituted II with halo, etc.; Z = O, etc.; B = moiety required for completing mono-, ploy-heterocyclic ring containing N together with N-C-Z; dotted line indicates

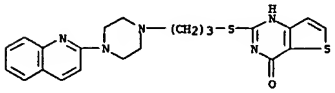
L11 ANSWER 2 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
single, double bond] were prepd. For example, treatment of potassium 3-amino-5,6-dimethyl-4-oxo-3,4-dihydrothieno[2,3-d]pyrimidine-2-thiolate with 2-[4-(3-chloropropyl)piperazin-1-yl]quinoline, e.g., prepd. from piperazine in 2 steps, afforded 3-amino-5,6-dimethyl-2-[3-(4-quinolin-2-ylpiperazin-1-yl)propylthio]-3H-thieno[2,3-d]pyrimidin-4-one (III) in 50% yield. In 5-HT3 receptor affinity assay (in vitro), compd. III exhibited the antagonistic activity of 94% at 10-7 M. Compds. I are claimed useful for the treatment of anxiety, depression, etc. Formulation is given.

IT 864384-99-6P 864385-67-1P 864386-12-9P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pyrimidine derivs. as 5-HT3 receptor antagonists having agonistic activity on 5-HT1A for treatment of anxiety, depression, etc.)

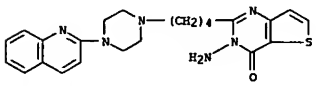
RN 864384-99-6 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 3-amino-2-[[3-[4-(2-quinolinyl)-1-piperazinyl]propyl]thio]- (9CI) (CA INDEX NAME)



RN 864385-67-1 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(1H)-one, 2-[[3-[4-(2-quinolinyl)-1-piperazinyl]propyl]thio]- (9CI) (CA INDEX NAME)



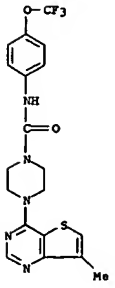
RN 864386-12-9 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 3-amino-2-[4-[4-(2-quinolinyl)-1-piperazinyl]butyl]- (9CI) (CA INDEX NAME)



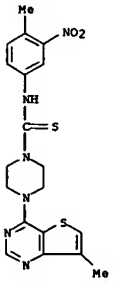
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:957878 CAPLUS
DOCUMENT NUMBER: 143:318368
TITLE: Pharmacophore Modeling, Docking, and Principal Component Analysis Based Clustering: Combined Computer-Assisted Approaches To Identify New Inhibitors of the Human Rhinovirus Coat Protein
AUTHOR(S): Steindl, Theodora M.; Crump, Carolyn E.; Hayden, Frederick G.; Langer, Thierry
CORPORATE SOURCE: Department of Pharmaceutical Chemistry, Institute of Pharmacy, and Center for Molecular Biosciences Innsbruck (CMBI), University of Innsbruck, Innsbruck, A-6020, Austria
SOURCE: Journal of Medicinal Chemistry (2005), 48(20), 6250-6260
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The development and application of a sophisticated virtual screening and selection protocol to identify potential, novel inhibitors of the human rhinovirus coat protein employing various computer-assisted strategies are described. A large com. available database of compds. was screened using a highly selective, structure-based pharmacophore model generated with the program Catalyst. A docking study and a principal component anal. were carried out within the software package Cerius and served to validate and further refine the obtained results. These combined efforts led to the selection of six candidate structures, for which in vitro antirhinoviral activity could be shown in a biol. assay.
IT 677705-05-4 677705-09-8
RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pharmacophore modeling, docking, and principal component anal. based clustering and combined computer-assisted approaches to identify new inhibitors of human Rhinovirus coat protein)
RN 677705-05-4 CAPLUS
CN 1-Piperazinecarboxamide, 4-(7-methylthieno[3,2-d]pyrimidin-4-yl)-N-[4-(trifluoromethoxy)phenyl]- (9CI) (CA INDEX NAME)

L11 ANSWER 3 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 677705-09-8 CAPLUS
CN 1-Piperazinecarbothioamide, N-(4-methyl-3-nitrophenyl)-4-(7-methylthieno[3,2-d]pyrimidin-4-yl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

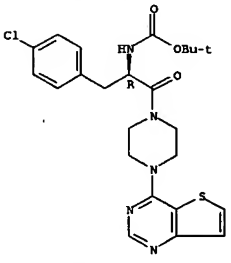
L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:490266 CAPLUS
DOCUMENT NUMBER: 143:40007
TITLE: AKT protein kinase inhibitors for use in treatment of hyperproliferative diseases
INVENTOR(S): Mitchell, Ian S.; Spencer, Keith L.; Stengel, Peter; Han, Yongxin; Kallan, Nicholas C.; Munson, Mark; Vigers, Guy P. A.; Blake, James; Piscopio, Anthony; Josey, John; Miller, Scott; Xiao, Dengming; Xu, Riu; Rao, Chang; Wang, Bin; Bernacki, April L.
PATENT ASSIGNEE(S): Array Biopharma Inc., USA
SOURCE: PCT Int. Appl., 234 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005051304	A2	20050609	WO 2004-US39094	20041119
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2005130954	A1	20050616	US 2004-993173	20041119
PRIORITY APPLN. INFO.:			US 2003-524003P	P 20031121
OTHER SOURCE(S):	MARPAT 143:40007			

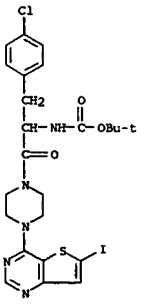
AB The present invention provides compds., including resolved enantiomers, diastereomers, solvates and pharmaceutically acceptable salts thereof, and methods of using the compds. of this invention as AKT protein kinase inhibitors and for the treatment of hyperproliferative diseases such as cancer. Thus, over 100 compds. were synthesized. Several of these compds., including (2R)-2-amino-3-(4-chlorophenyl)-1-(4-quinazolin-4-ylpiperazin-1-yl)propan-1-one, (2R)-2-amino-3-(2-naphthyl)-1-(4-quinazolin-4-ylpiperazin-1-yl)propan-1-one, and (2R)-2-amino-3-(4-chlorophenyl)-1-(4-thieno[3,2,b]pyridin-7-yl-piperazin-1-yl)propan-1-one inhibited human AKT-1 protein kinase in in vitro assays.
IT 853679-42-2P 853679-48-8P 853679-49-9P 853679-50-2P 853679-51-3P 853679-52-4P 853679-55-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(AKT protein kinase inhibitors for use in treatment of hyperproliferative diseases)
RN 853679-42-2 CAPLUS
CN Carbamic acid, [(1R)-1-[(4-chlorophenyl)methyl]-2-oxo-2-(4-thieno[3,2-d]pyrimidin-4-yl-1-piperazinyl)ethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

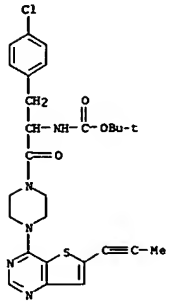


RN 853679-48-8 CAPLUS
CN Carbamic acid, [1-[(4-chlorophenyl)methyl]-2-[4-(6-iodothieno[3,2-d]pyrimidin-4-yl)-1-piperazinyl]-2-oxoethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

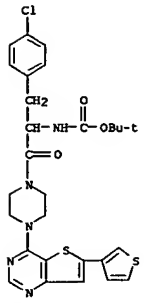


RN 853679-49-9 CAPLUS
CN Carbamic acid, [1-[(4-chlorophenyl)methyl]-2-oxo-2-[4-(6-(1-propynyl)thieno[3,2-d]pyrimidin-4-yl]-1-piperazinyl]ethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

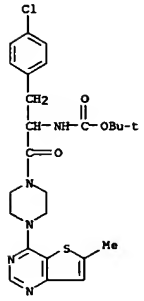


RN 853679-50-2 CAPLUS
CN Carbamic acid, [1-[(4-chlorophenyl)methyl]-2-oxo-2-[4-[6-(3-thienyl)thieno[3,2-d]pyrimidin-4-yl]-1-piperazinyl]ethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



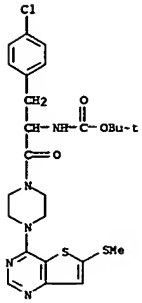
RN 853679-51-3 CAPLUS
CN Carbamic acid, [1-[(4-chlorophenyl)methyl]-2-[4-[6-(methylthio)thieno[3,2-d]pyrimidin-4-yl]-1-piperazinyl]-2-oxoethyl]-, 1,1-dimethylethyl ester

L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
CN Carbamic acid, [1-[(4-chlorophenyl)methyl]-2-[4-(6-methylthieno[3,2-d]pyrimidin-4-yl)-1-piperazinyl]-2-oxoethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

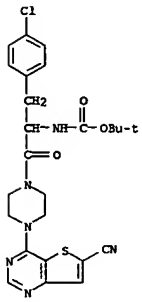


IT 853678-53-2P
RL: RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(AKT protein kinase inhibitors for use in treatment of hyperproliferative diseases)
RN 853678-53-2 CAPLUS
CN Piperazine, 1-[2-amino-3-(4-chlorophenyl)-1-oxopropyl]-4-(6-iodothieno[3,2-d]pyrimidin-4-yl)-, dihydrochloride (9CI) (CA INDEX NAME)

L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
(9CI) (CA INDEX NAME)

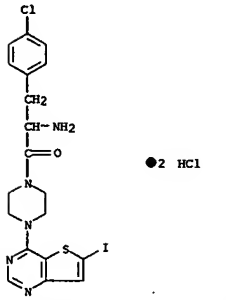


RN 853679-52-4 CAPLUS
CN Carbamic acid, [1-[(4-chlorophenyl)methyl]-2-[4-(6-cyanothieno[3,2-d]pyrimidin-4-yl)-1-piperazinyl]-2-oxoethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 853679-55-7 CAPLUS

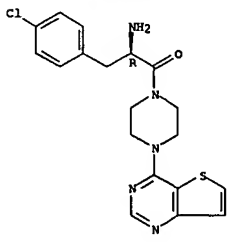
L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



●2 HCl

IT 853678-50-9P 853678-54-3P 853678-55-4P
853678-56-5P 853678-57-6P 853678-58-7P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(AKT protein kinase inhibitors for use in treatment of hyperproliferative diseases)
RN 853678-50-9 CAPLUS
CN Piperazine, 1-[(2R)-2-amino-3-(4-chlorophenyl)-1-oxopropyl]-4-thieno[3,2-d]pyrimidin-4-yl-, dihydrochloride (9CI) (CA INDEX NAME)

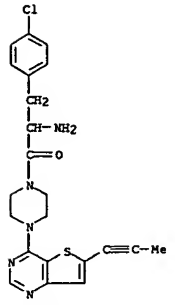
Absolute stereochemistry.



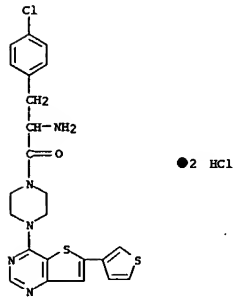
●2 HCl

RN 853678-54-3 CAPLUS
CN Piperazine, 1-[2-amino-3-(4-chlorophenyl)-1-oxopropyl]-4-[6-(1-

L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
propynyl)thieno[3,2-d]pyrimidin-4-yl]-, dihydrochloride (9CI) (CA INDEX NAME)



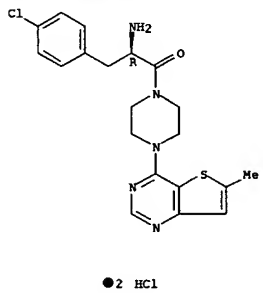
RN 853678-55-4 CAPLUS
CN Piperazine, 1-[2-amino-3-(4-chlorophenyl)-1-oxopropyl]-4-[6-(3-thienyl)thieno[3,2-d]pyrimidin-4-yl]-, dihydrochloride (9CI) (CA INDEX NAME)



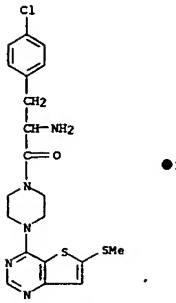
L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

RN 853678-58-7 CAPLUS
CN Piperazine, 1-[(2R)-2-amino-3-(4-chlorophenyl)-1-oxopropyl]-4-(6-methylthieno[3,2-d]pyrimidin-4-yl)-, dihydrochloride (9CI) (CA INDEX NAME)

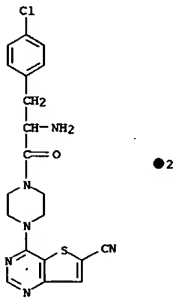
Absolute stereochemistry.



L11 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 853678-56-5 CAPLUS
CN Piperazine, 1-[2-amino-3-(4-chlorophenyl)-1-oxopropyl]-4-[6-(methylthio)thieno[3,2-d]pyrimidin-4-yl]-, dihydrochloride (9CI) (CA INDEX NAME)



RN 853678-57-6 CAPLUS
CN Piperazine, 1-[2-amino-3-(4-chlorophenyl)-1-oxopropyl]-4-(6-cyanothieno[3,2-d]pyrimidin-4-yl)-, dihydrochloride (9CI) (CA INDEX NAME)

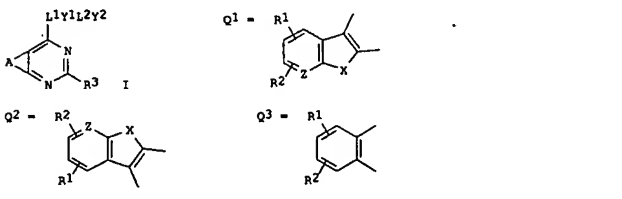


L11 ANSWER 5 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER:	2005:371252 CAPLUS
DOCUMENT NUMBER:	142:430306
TITLE:	Preparation of fused pyrimidines as protein kinase inhibitors
INVENTOR(S):	Hurley, Laurence H.; Mahadevan, Daruka; Han, Haiyong; Bearss, David J.; Vankayalapati, Hariprasad; Bashyam, Sridevi; Munoz, Ruben M.; Warner, Steven L.; Della, Croce Kimiko; Von Hoff, Daniel D.; Grand, Cory L.
PATENT ASSIGNEE(S):	Arizona Board of Regents On Behalf of the University of Arizona, USA; Montigen Pharmaceuticals, Inc.
SOURCE:	PCT Int. Appl., 170 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005037825	A2	20050428	WO 2004-US33870	20041014
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2005227992	A1	20051013	US 2004-965313	20041014
US 2005239793	A1	20051027	US 2005-92809	20050329
US 2005239794	A1	20051027	US 2005-92863	20050329
PRIORITY APPLN. INFO.:			US 2003-511486P P	20031014
			US 2003-511489P P	20031014
			US 2004-608529P P	20040909
			US 2004-965313 A1	20041014
OTHER SOURCE(S):	MARPAT 142:430306			

GI



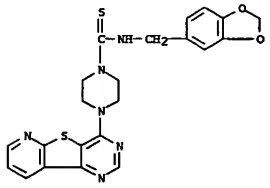
AB Title compds. [I; A = Q1-Q3; X = NH, S, O; Z = CH, N; R1, R2 = H, OH, halo, cyano, NO2, NH2, R, OR, SMe, CO2R, O2CR; R = (substituted) alkyl; R3

L11 ANSWER 5 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
= H, NH2, alkyl, cyano, NO2, L3Y3; L3 = bond, S, NH; Y1-Y3 = (substituted) carbocyclyl, heterocyclyl; L1 = bond, NR', OC(S)NH; R' = H, alkyl; L2 = bond, C(S)NH, NHC(S)NH, CONH, (CH2)n, NH(CH2)n, NH(CH2)nNH, SO2, SO2NH, etc.; n = 1-4), were prepd. Thus, 6,7-dimethoxy-4-(1-piperazinyl)-9H-pyrimido[4,5-b]indole and pyridine in CH2Cl2 were treated with a residue prepd. from sulfadiazine and thiophosgene followed by stirring overnight to give 16% 4-(6,7-dimethoxy-9H-1,3,9-triazafluoren-4-yl)piperazine-1-carbothioic acid [4-(pyrimidin-2-ylsulfamoyl)phenyl]amide. The latter inhibited Aurora-2 kinase with IC50 = 0.9 μM.

IT 850879-10-6P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(claimed compound; preparation of fused pyrimidines as protein kinase inhibitors)

RN 850879-10-6 CAPLUS

CN 1-Piperazinecarbothioamide, N-(1,3-benzodioxol-5-ylmethyl)-4-pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4-yl- (9CI) (CA INDEX NAME)



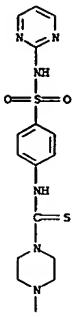
IT 850879-13-9P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of fused pyrimidines as protein kinase inhibitors)

RN 850879-13-9 CAPLUS

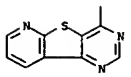
CN 1-Piperazinecarbothioamide, 4-pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4-yl-N-[4-[(2-pyrimidinylamino)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)

L11 ANSWER 5 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

PAGE 1-A



PAGE 2-A



L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:120672 CAPLUS
DOCUMENT NUMBER: 142:198094
TITLE: Preparation of pyrimidopyrimidines as protein kinase inhibitors
INVENTOR(S): Sim, Taebo; Lee, Hyun Soo; Ren, Pingda; Ding, Qiang; Wang, Xia; Uno, Tetsuo; Zhang, Guobao; Liu, Yi; Li, Bing; Li, Lintong; Gray, Nathaniel; You, Shuli
PATENT ASSIGNEE(S): IRM LLC, Bermuda
SOURCE: PCT Int. Appl., 148 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

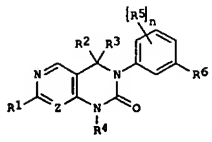
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005011597	A2	20050210	WO 2004-US24764	20040729
WO 2005011597	A3	20050324		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2005222177	A1	20051006	US 2004-909227	20040729

PRIORITY APPLN. INFO.: US 2003-491133P P 20030729
OTHER SOURCE(S): MARPAT 142:198094
GI

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



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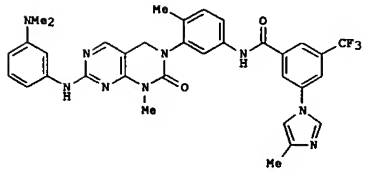

II

AB The invention provides a novel class of compds. I [n = 0-4; Z = N, CH; R1 = H, alkyl, arylalkyl, hydroxy, alkoxy, etc.; R2, R3 = H, alkyl; or R1 and R2 together form O or S; R4 = H, OH, NH2, alkyl, etc.; R5 = alkyl, alkenyl, alkoxy, etc.; R6 = NR12Y(O)R13, Y(O)NR12R13 (wherein Y = C, P(O), S(O); R12 = H, alkyl; R13 = aryl, heteroaryl, cycloalkyl, etc.)], pharmaceutical compns. comprising such compds. and methods of using such compds. to treat or prevent diseases or disorders associated with abnormal or deregulated kinase activity, particularly diseases or disorders that involve abnormal activation of the Abl, BCR-Abl, Bmx, c-Raf, Csk, Fes, FGFR, Flt3, Ikk, IR, JNK, Lck, Mkk, PKC, PKD, Rsk, SAPK, Syk, Trk, BTK, Src, EGFR, IGF, Mek, Ros and Tie2 kinases. E.g., a multi-step synthesis of II, starting from 4-amino-2-methylsulfanylpyrimidine-5-carbonitrile, was given. The compds. I show a percentage inhibition of greater than 50% against the mentioned above kinases at 10 μM.

IT 839705-54-3P 839705-57-6P 839705-61-2P
839705-77-0P 839705-89-4P 839705-90-7P
839705-92-9P 839705-93-0P 839705-94-1P
839706-36-4P 839706-37-5P 839706-39-7P
839706-40-0P 839706-43-3P 839706-44-4P
839706-45-5P 839706-48-8P 839706-59-1P
839706-60-4P 839706-73-9P 839706-74-0P
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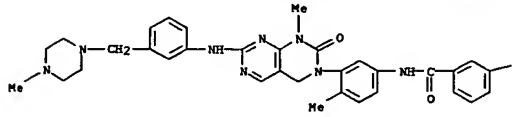
839707-77-6P 839707-79-8P 839707-80-1P
839707-82-3P 839707-84-5P 839707-86-7P
839707-87-8P 839707-96-9P 839708-25-7P
839708-26-8P 839708-27-9P 839708-33-7P
839708-40-6P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
(Uses)
(prepn. of pyrimidopyrimidines as protein kinase inhibitors)

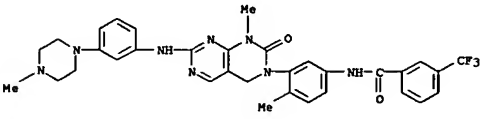
RN 839705-54-3 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[3-[(4-methyl-1-piperazinyl)methyl]phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

RN 839705-57-6 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[3-(4-methyl-1-piperazinyl)phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



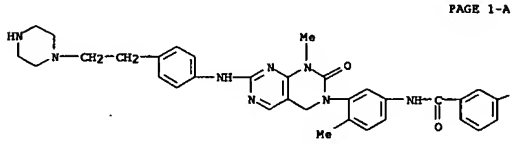
RN 839705-61-2 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[(4-methyl-1-piperazinyl)amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

PAGE 1-B

RN 839705-90-7 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-2-oxo-7-[[4-[2-(1-piperazinyl)ethyl]phenyl]amino]pyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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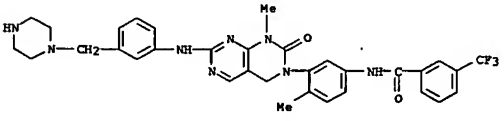
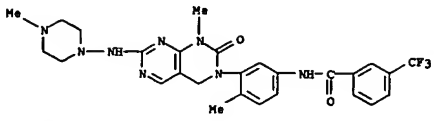
RN 839705-92-9 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-2-oxo-7-[[3-(1-piperazinylmethyl)phenyl]amino]pyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839705-93-0 CAPLUS
CN Benzamide, N-[3-[7-[[4-(4-ethyl-1-piperazinyl)phenyl]amino]-1,4-dihydro-1-methyl-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 839705-77-0 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[3-[(4-methyl-1-piperazinyl)methyl]phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(dimethylamino)-5-(trifluoromethyl)- (9CI) (CA INDEX NAME)

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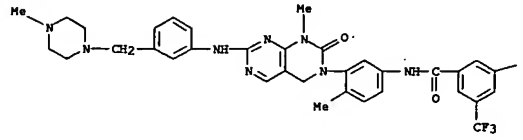
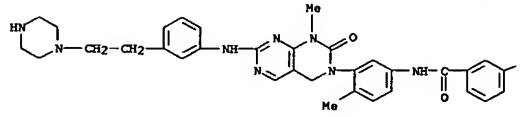


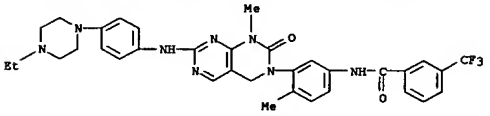
PAGE 1-B

RN 839705-89-4 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-2-oxo-7-[[3-[2-(1-piperazinyl)ethyl]phenyl]amino]pyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

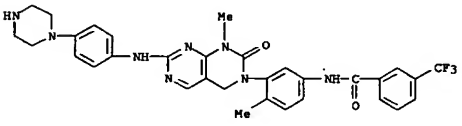
PAGE 1-A



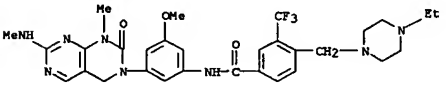
L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



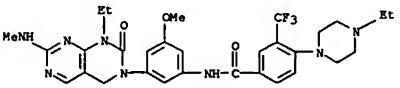
RN 839705-94-1 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-2-oxo-7-[[4-(1-piperazinyl)phenyl]amino]pyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839706-36-4 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-(methylamino)-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-5-methoxyphenyl]-4-[(4-ethyl-1-piperazinyl)methyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

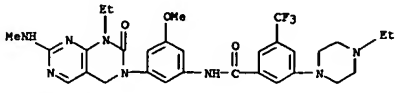


RN 839706-37-5 CAPLUS
CN Benzamide, N-[3-[1-ethyl-1,4-dihydro-7-(methylamino)-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-5-methoxyphenyl]-4-(4-ethyl-1-piperazinyl)-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

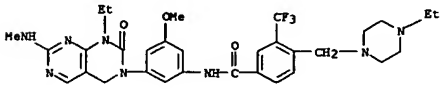


RN 839706-39-7 CAPLUS
CN Benzamide, N-[3-[1-ethyl-1,4-dihydro-7-(methylamino)-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-5-methoxyphenyl]-3-(4-ethyl-1-piperazinyl)-5-(trifluoromethyl)- (9CI) (CA INDEX NAME)

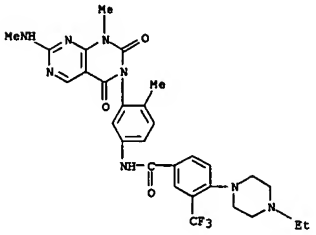
L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 839706-40-0 CAPLUS
CN Benzamide, N-[3-[1-ethyl-1,4-dihydro-7-(methylamino)-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-5-methoxyphenyl]-4-[(4-ethyl-1-piperazinyl)methyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



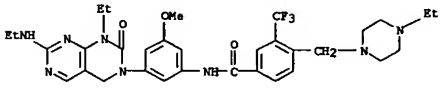
RN 839706-43-3 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-(methylamino)-2,4-dioxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-4-(4-ethyl-1-piperazinyl)-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839706-44-4 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-(methylamino)-2,4-dioxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(4-ethyl-1-piperazinyl)-5-(trifluoromethyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

RN 839706-59-1 CAPLUS
CN Benzamide, N-[3-[1-ethyl-7-(ethylamino)-1,4-dihydro-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-5-methoxyphenyl]-4-[(4-ethyl-1-piperazinyl)methyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839706-60-4 CAPLUS
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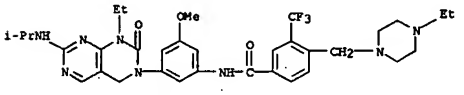

RN 839706-73-9 CAPLUS
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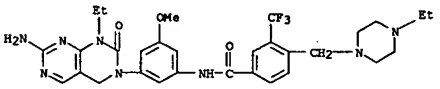
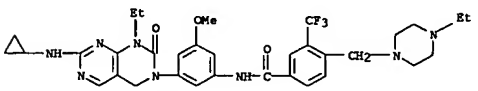
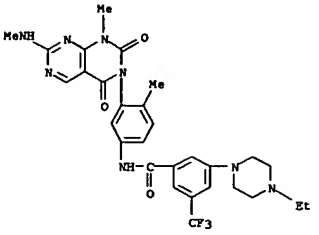


RN 839706-74-0 CAPLUS
CN Benzamide, N-[3-[7-(cyclopropylamino)-1-ethyl-1,4-dihydro-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-5-methoxyphenyl]-4-[(4-ethyl-1-piperazinyl)methyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839706-75-1 CAPLUS
CN Benzamide, N-[3-[1-ethyl-1,4-dihydro-7-[(6-methyl-3-pyridinyl)amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-5-methoxyphenyl]-4-[(4-ethyl-1-

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



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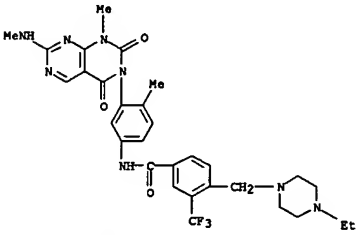
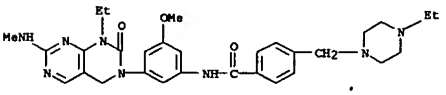
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-(methylamino)-2,4-dioxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-4-[(4-ethyl-1-piperazinyl)methyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839706-48-8 CAPLUS
CN Benzamide, N-[3-[1-ethyl-1,4-dihydro-7-(methylamino)-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-5-methoxyphenyl]-4-[(4-ethyl-1-piperazinyl)methyl]-(9CI) (CA INDEX NAME)



L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
piperazinyl)methyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

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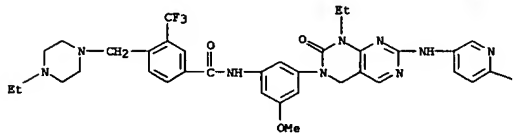
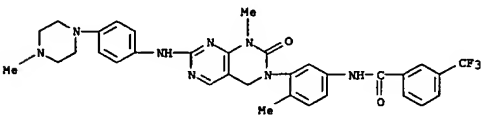


PAGE 1-B

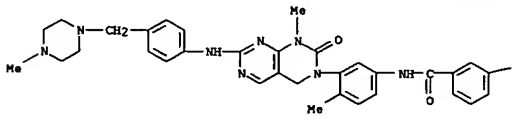
Me

RN 839706-94-4 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839706-98-8 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[4-[(4-methyl-1-piperazinyl)methyl]phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

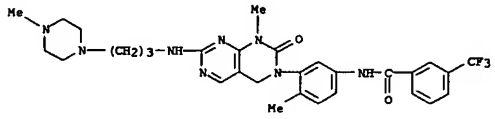
PAGE 1-A



L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

PAGE 1-B

RN 839707-41-4 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[3-(4-methyl-1-piperazinyl)propyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



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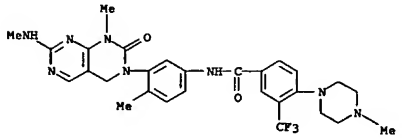

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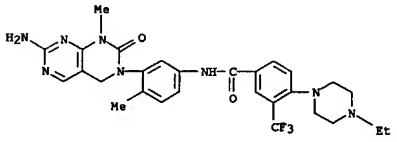
L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



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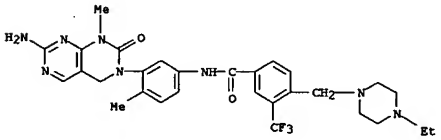

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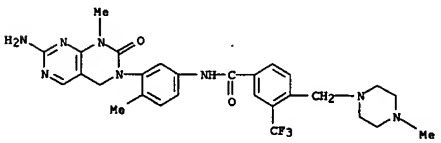
CN Benzamide, N-[3-(7-amino-1,4-dihydro-1-methyl-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl)-4-methylphenyl]-4-[(4-methyl-1-piperazinyl)methyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



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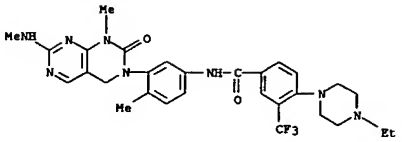
L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



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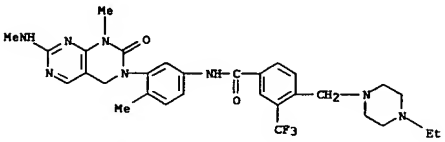
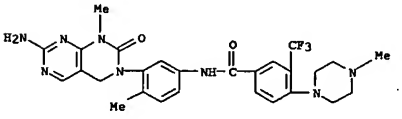
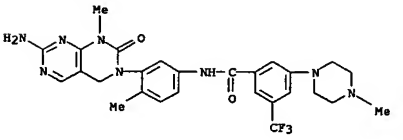


RN 839707-75-4 CAPLUS
CN Benzamide, N-[3-(7-amino-1,4-dihydro-1-methyl-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl)-4-methylphenyl]-4-(4-methyl-1-piperazinyl)-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

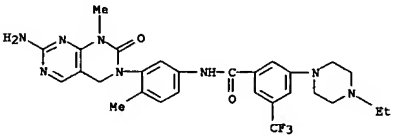


RN 839707-76-5 CAPLUS
CN Benzamide, N-[3-(7-amino-1,4-dihydro-1-methyl-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl)-4-methylphenyl]-4-(4-ethyl-1-piperazinyl)-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

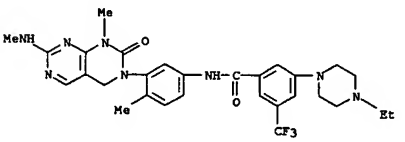
L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 839707-82-3 CAPLUS
CN Benzamide, N-[3-(7-amino-1,4-dihydro-1-methyl-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl)-4-methylphenyl]-3-(4-ethyl-1-piperazinyl)-5-(trifluoromethyl)- (9CI) (CA INDEX NAME)

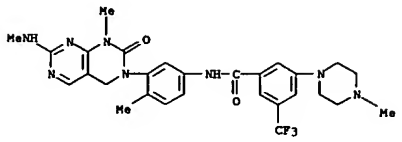


RN 839707-84-5 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-(methylamino)-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(4-ethyl-1-piperazinyl)-5-(trifluoromethyl)- (9CI) (CA INDEX NAME)

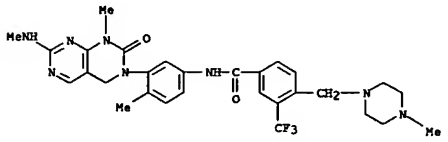


RN 839707-86-7 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-(methylamino)-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(4-methyl-1-piperazinyl)-5-(trifluoromethyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 839707-87-8 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-(methylamino)-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-4-[(4-methyl-1-piperazinyl)methyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839707-96-9 CAPLUS
CN Benzamide, N-[3-[7-[[3-(dimethylamino)phenyl]amino]-1,4-dihydro-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-4-[(4-methyl-1-piperazinyl)methyl]- (9CI) (CA INDEX NAME)

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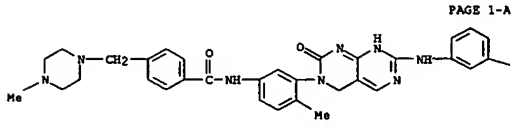
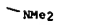
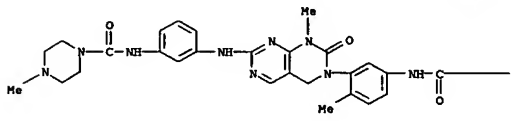


PAGE 1-B

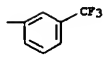


L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

PAGE 1-A



PAGE 1-B



RN 839708-33-7 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[3-[(4-methyl-1-piperazinyl)carbonyl]phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

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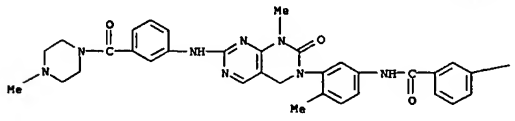

PAGE 1-B

RN 839708-40-6 CAPLUS
CN Benzamide, N-[3-[7-[[3-(dimethylamino)phenyl]amino]-1,4-dihydro-1-methyl-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(4-methyl-1-piperazinyl)-5-(trifluoromethyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

RN 839708-25-7 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[3-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)

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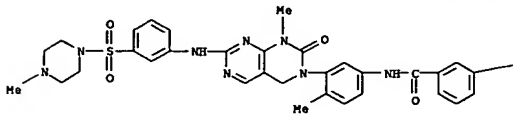

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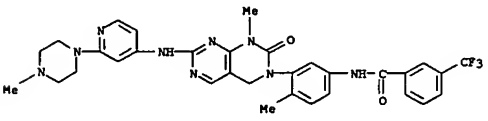
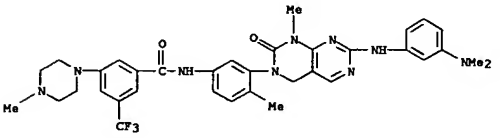
RN 839708-26-8 CAPLUS
CN Benzamide, N-[3-[1,4-dihydro-1-methyl-7-[[2-(4-methyl-1-piperazinyl)-4-pyridinyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-3(2H)-yl]-4-methylphenyl]-3-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 839708-27-9 CAPLUS
CN 1-Piperazinecarboxamide, 4-methyl-N-[3-[[5,6,7,8-tetrahydro-8-methyl-6-[2-methyl-5-[[3-(trifluoromethyl)benzoyl]amino]phenyl]-7-oxopyrimido[4,5-d]pyrimidin-2-yl]amino]phenyl]- (9CI) (CA INDEX NAME)

L11 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



L11 ANSWER 7 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:76237 CAPLUS
DOCUMENT NUMBER: 142:176860
TITLE: Preparation of thienopyrimidine derivatives as ErbB kinase inhibitors
INVENTOR(S): Dickerson, Scott Howard; Emerson, Holly Kathleen; Hinkle, Kevin Wayne; Hornberger, Keith Robert; Sammond, Douglas McCord; Smith, Stephon; Stevens, Kirk Lawrence; Hubbard, Robert Dale; Petrov, Kimberly Glennon; Reno, Michael John; Uehling, David Edward; Waterson, Alex Gregory
PATENT ASSIGNEE(S): Smithkline Beecham Corporation, USA
SOURCE: PCT Int. Appl., 241 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005007083	A2	20050127	WO 2004-US19410	20040617
WO 2005007083	A3	20050421		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-479324P P 20030618
OTHER SOURCE(S): MARPAT 142:176860
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Title compds. I [wherein one of A1 and A2 is S and the other is CH; R1 = -Z-(Z1)m-(Z2)n; Z = heterocyclyl, heterocyclylene; Z1 = OCO, OCS, CO; m = 0-1; Z2 = heterocyclyl, aralkyl, alkyl, halo, etc.; n = 0-1; R2 = H, alkyl, CO-alkyl; R3 = -Q-(Q1)r-(Q2)t; Q = hetero/arylene, aryl, aralkyl; Q1 = O, SO2, S; r = 0-1; Q2 = aralkyl, hetero/aryl; t = 0-1; and their salts, solvates, and physiol. functional derivs.] were prepared as ErbB kinase inhibitors for treating cancer. Thus, reacting tert-Bu [(2R,3S)-2-ethynyl-3-morpholin-4-yl]pyrrolidine-1-carboxylate (preparation given) with 6-Bromo-N-[3-chloro-4-[(3-fluorobenzyl)oxy]phenyl]thieno[3,2-d]pyrimidin-4-amine gave title compound II. I showed inhibitory activity vs. EGFR, ErbB-2, and ErbB-4 protein tyrosine kinases with a pIC50 ≥ 5.5. I are useful in the treatment of diseases associated with inappropriate ErbB family kinase activity.
IT **833476-38-3P**, 4-Methyl-1-piperazinecarboxylic acid

L11 ANSWER 7 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
(3R,5S)-5-[[4-[(3-Chloro-4-[[(3-fluorophenyl)methyl]oxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]ethynyl]pyrrolidin-3-yl ester **833478-46-9P**, 1-Piperazinecarboxylic acid (3R,5S)-5-[[4-[[3-Chloro-4-[[(3-fluorophenyl)methyl]oxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]ethynyl]pyrrolidin-3-yl ester **833478-47-0P**, 1-Piperazinecarboxylic acid (3R,5S)-5-[[4-[[1-(Phenylmethyl)-1H-indazol-5-yl]amino]thieno[3,2-d]pyrimidin-6-yl]ethynyl]pyrrolidin-3-yl ester
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(drug candidate; prepn. of thienopyrimidines as ErB kinase inhibitors)
RN 833476-38-3 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-methyl-, (3R,5S)-5-[[4-[[3-chloro-4-[(3-fluorophenyl)methoxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]ethynyl]-3-pyrrolidinyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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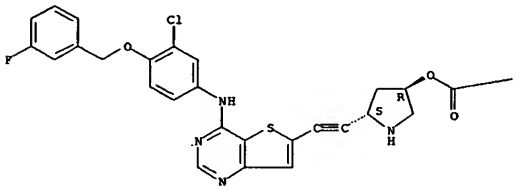

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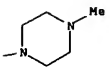
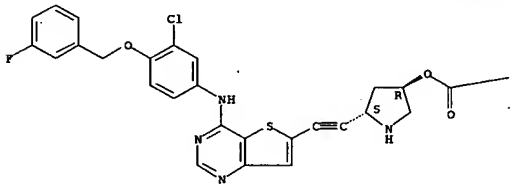


RN 833478-46-9 CAPLUS
CN 1-Piperazinecarboxylic acid, (3R,5S)-5-[[4-[[3-chloro-4-[(3-fluorophenyl)methoxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]ethynyl]-3-pyrrolidinyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

L11 ANSWER 7 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

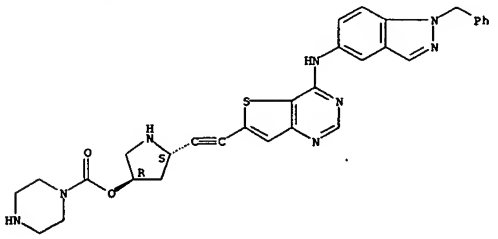
PAGE 1-A



PAGE 1-B

RN 833478-47-0 CAPLUS
CN 1-Piperazinecarboxylic acid, (3R,5S)-5-[[4-[[1-(phenylmethyl)-1H-indazol-5-yl]amino]thieno[3,2-d]pyrimidin-6-yl]ethynyl]-3-pyrrolidinyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



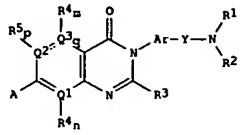
L11 ANSWER 8 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:902390 CAPLUS
DOCUMENT NUMBER: 142:176855
TITLE: Preparation of pyrimidinones as melanin concentrating hormone receptor 1 antagonists
INVENTOR(S): Barvian, Kevin K.; Carpenter, Andrew J.; Cooper, Joel P.; Feldman, Paul L.; Guo, Yu C.; Handlon, Anthony L.; Hertzog, Donald L.; Hyman, Clifton E.; Peat, Andrew J.; Peckham, Gregory E.; Speake, Jason D.; Swain, William R.; Tavares, Francis X.; Zhou, Huiqiang
PATENT ASSIGNEE(S): Smithkline Beecham Corporation, USA
SOURCE: PCT Int. Appl., 234 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004092181	A1	20041028	WO 2004-US10518	20040406
WO 2004092181	C2	20050127		

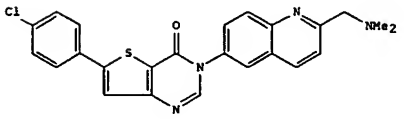
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-462292P P 20030411
OTHER SOURCE(S): MARPAT 142:176855
GI

L11 ANSWER 8 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



I

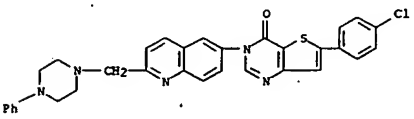


II

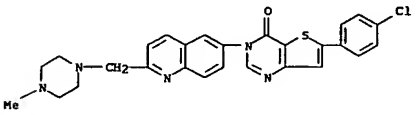
AB The title compds. I [A = (substituted)(hetero)aryl; the dashed line connecting Q2 to Q3 represents an optional bond; m, n, p and q = 0 or 1; when q is 1, the dashed line is a bond; Q1 and Q3 = C or N; when q is 0, then Q2 is N, S, or O; when q is 1, then Q2 is C or N; when q is 1 and Q2 is N, then p is 0; when Q2 is S or O, then p is 0; when Q1 is N, then n is 0; when Q3 is N, then m is 0; R3 = H, amino, (cyclo)alkyl, and alkylthio; when Q1 or Q3 is C, then R4 is H, (cyclo)alkyl, alkoxy, amino, alkylamino, dialkylamino, OH, CN, alkylthio, and halo; when q is 1 and Q2 is C or when q is 0 and Q2 is N, then R5 is H, (cyclo)alkyl, alkoxy, amino, alkylamino, dialkylamino, OH, CN, alkylthio, and halo; Ar = (substituted)fused bicyclic ring; Y = a bond or (substituted)alkylene; R1, R2 = H, (substituted)(cyclo)alkyl, 5- or 6-membered heterocycle; or R1, R2 = (substituted)aryl, 5- or 6-membered heteroaryl containing 1, 2, 3 heteroatoms selected from N, O, and S; or R1 and R2 together with the N to which they are bonded form a 4-8 membered heterocyclic ring or a 7-11 membered bicyclic heterocyclic ring; or R2 together with adjacent N and Y or Ar may form an (substituted)nitrogen containing heterocycle] were prepared as melanin concentrating hormone receptor 1 (MCHR1 or 11CBy) antagonists. For example, compound II was prepared in a multi-step synthesis starting from 6-nitroquinoline-2-carbaldehyde. The latter showed a pIC50 of 9.1 in a functional assay of MCHR1.

IT **832100-09-1P 832100-11-5P 832100-26-2P 832100-35-3P 832100-91-1P 832101-30-1P 832101-84-5P 832101-86-7P 832103-14-7P**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of pyrimidinones as melanin concg. hormone receptor 1 antagonists)

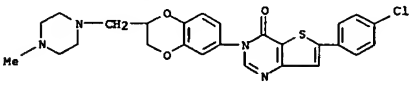
RN 832100-09-1 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[2-[(4-phenyl-1-piperazinyl)methyl]-6-quinolinyl]- (9CI) (CA INDEX NAME)



RN 832100-11-5 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[2-[(4-methyl-1-piperazinyl)methyl]-6-quinolinyl]- (9CI) (CA INDEX NAME)

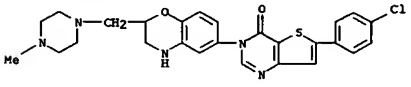


RN 832100-26-2 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[2,3-dihydro-2-[(4-methyl-1-piperazinyl)methyl]-1,4-benzodioxin-6-yl]- (9CI) (CA INDEX NAME)



RN 832100-35-3 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[3,4-dihydro-2-[(4-methyl-1-piperazinyl)methyl]-2H-1,4-benzoxazin-6-yl]- (9CI) (CA INDEX NAME)

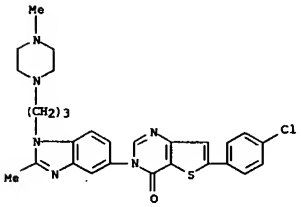
L11 ANSWER 8 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 832100-91-1 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[2-methyl-1-[3-(4-methyl-1-piperazinyl)propyl]-1H-benzimidazol-5-yl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 832100-90-0
CMF C28 H29 Cl N6 O S



CM 2

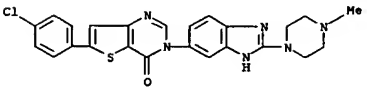
CRN 76-05-1
CMF C2 H F3 O2

RN 832101-30-1 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[2-(4-methyl-1-piperazinyl)-1H-benzimidazol-5-yl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 832101-29-8
CMF C24 H21 Cl N6 O S

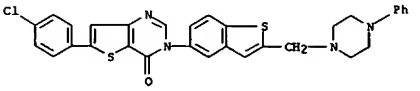
L11 ANSWER 8 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



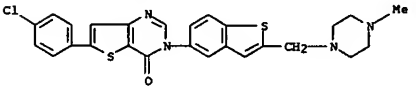
CM 2

CRN 76-05-1
CMF C2 H F3 O2

RN 832101-84-5 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[2-[(4-phenyl-1-piperazinyl)methyl]benzo[b]thien-5-yl]- (9CI) (CA INDEX NAME)

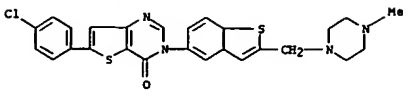


RN 832101-86-7 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[2-[(4-methyl-1-piperazinyl)methyl]benzo[b]thien-5-yl]- (9CI) (CA INDEX NAME)



RN 832103-14-7 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[3a,7a-dihydro-2-[(4-methyl-1-piperazinyl)methyl]benzo[b]thien-5-yl]- (9CI) (CA INDEX NAME)

L11 ANSWER 8 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

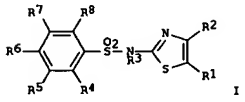
L11 ANSWER 9 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:902341 CAPLUS
DOCUMENT NUMBER: 141:379919
TITLE: Preparation of (iso)thiazole benzenesulfonamides and other heterocycles as inhibitors of fungal invasion
INVENTOR(S): Talley, John Jeffrey; Fretzen, Angelika; Zimmerman, Craig; Barden, Timothy.; Yang, Jing Jing; Martinez, Eduardo; Milne, G. Todd; Etchell, A. Cordero; Christine, M. Pierce; Houman, Fariba; Busby, Robert; Summers, Eric F.; Antonelli, Stephen; Lee, Peter; Farwell, Michael; Mayorga, Maria; O'Leary, Jessica
PATENT ASSIGNEE(S): Microbia, Inc., USA
SOURCE: PCT Int. Appl., 179 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004092123	A2	20041028	WO 2004-US11187	20040412
WO 2004092123	A3	20050519		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:	US 2003-461727P	P 20030410
	US 2003-469286P	P 20030509
	US 2003-485678P	P 20030709

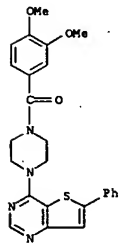
OTHER SOURCE(S): MARPAT 141:379919
GI



I

AB Title compds. e.g. [I; R1 = (substituted) alkyl, alkoxy; R2 = H, halo; R3 = H, CHO, Ac, (substituted) alkyl; R4 = H, halo, (substituted) alkyl, cycloalkyl, alkenyl, alkynyl, alkylamino, Ph, heteroaryl], were prepared Thus, 4-bromo-2-fluoro-N-(5-methylthiazol-2-yl)benzenesulfonamide, 4-fluorobenzeneboronic acid, Pd(PPh3)4, and K2CO3 were stirred in PhMe/Me2CHOH/H2O to give 15% 2,4'-difluoro-N-(5-methylthiazol-2-yl)-1,1'-

L11 ANSWER 9 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
biphenyl-4-sulfonamide. In a screen for inhibition of Candida albicans logarithmic phase growth, title compds. showed IC50's of as low as 0.0005 μM.
IT 680181-83-3
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(preparation of (iso)thiazole benzenesulfonamides and other heterocycles as
inhibitors of fungal invasion)
RN 680181-83-3 CAPLUS
CN Piperazine, 1-(3,4-dimethoxybenzoyl)-4-(6-phenylthieno[3,2-d]pyrimidin-4-yl)- (9CI) (CA INDEX NAME)



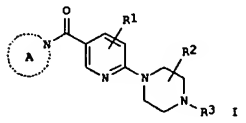
L11 ANSWER 10 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:718539 CAPLUS
DOCUMENT NUMBER: 141:243568
TITLE: Preparation of 1-[(3-pyridinyl)carbonyl]pyrrolidine derivatives as immunosuppressants
INVENTOR(S): Baxter, Andrew; King, Sarah; Pimm, Austen; Reuberson, James
PATENT ASSIGNEE(S): AstraZeneca AB, Swed.
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004074287	A1	20040902	WO 2004-SE215	20040218

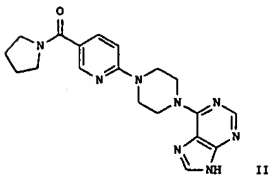
W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MX, MN, MW, MX, MX, MZ, MZ, NA, NI
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:	SE 2003-457	A 20030219

OTHER SOURCE(S): MARPAT 141:243568
GI



I



II

L11 ANSWER 10 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

AB The title compds. [I; A = 4-6 membered saturated ring; R1 = H, alkyl, halo, NR4R5, X(alkyl); X = O, S, NR4; R2 = H, alkyl; R3 = (un)substituted Ph, 5-6 membered heteroaryl with one or more N atoms, (un)saturated bicyclic system containing one or more heteroatoms, 5-6 membered heteroaryl containing one or more heteroatoms; R4, R5 = H, alkyl, hydroxyalkyl] and their pharmaceutically acceptable salts, were prepared E.g., a multi-step synthesis of II, was given. The compds. I were tested for inhibition of PMA/ionomycin-stimulated peripheral blood mononuclear cell proliferation (data were given for representative compds. I). Processes for the preparation of the compds. I together with pharmaceutical compns. containing them and their use in therapy in particular in effecting immunosuppression are also described.

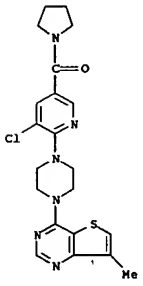
IT 749908-49-9P 749908-57-4P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of 1-[(3-pyridinyl)carbonyl]pyrrolidine derivs. as immunosuppressants)

RN 749908-49-4 CAPLUS

CN Pyrrolidine, 1-[[5-chloro-6-[4-(7-methylthieno[3,2-d]pyrimidin-4-yl)-1-piperazinyl]-3-pyridinyl]carbonyl]-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 749908-48-3
CMF C21 H23 Cl N6 O S

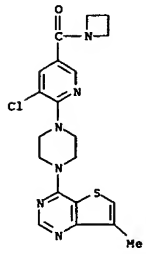


CM 2

CRN 76-05-1
CMF C2 H F3 O2

RN 749908-57-4 CAPLUS

CN Azetidine, 1-[[5-chloro-6-[4-(7-methylthieno[3,2-d]pyrimidin-4-yl)-1-piperazinyl]-3-pyridinyl]carbonyl]- (9CI) (CA INDEX NAME)



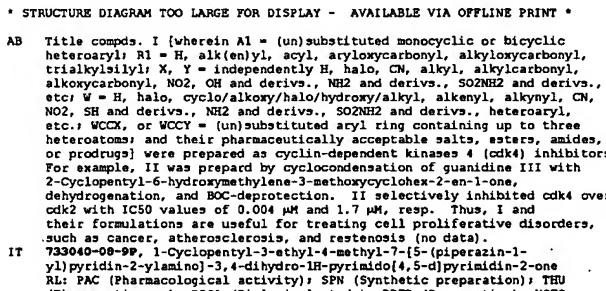
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 11 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:633921 CAPLUS
DOCUMENT NUMBER: 141:174079
TITLE: Preparation of 2-aminopyridines as cdk4 inhibitors
INVENTOR(S): Biwersi, Cathlin Marie; Mcnamara, Dennis Joseph; Repine, Joseph Thomas; Toogood, Peter Laurence; Vanderwel, Scott Norman; Warmus, Joseph Scott
PATENT ASSIGNEE(S): Warner-Lambert Company Llc, USA
SOURCE: PCT Int. Appl., 89 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004065378	A1	20040805	WO 2004-IB91	20040109
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2512646	AA	20040805	CA 2004-2512646	20040109
US 2004236084	A1	20041125	US 2004-759749	20040116
PRIORITY APPLN. INFO.:			US 2003-440805P	P 20030117
			WO 2004-IB91	W 20040109
OTHER SOURCE(S):	MARPAT 141:174079			

GI



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Title compds. I [wherein A1 = (un)substituted monocyclic or bicyclic heteroaryl; R1 = H, alk(en)yl, acyl, aryloxycarbonyl, alkyloxycarbonyl, trialkylsilyl; X, Y = independently H, halo, CN, alkyl, alkylcarbonyl, alkoxycarbonyl, NO2, OH and derivs., NH2 and derivs., SO2NH2 and derivs., etc; W = H, halo, cyclo/alkoxy/halo/hydroxy/alkyl, alkenyl, alkynyl, CN, NO2, SH and derivs., NH2 and derivs., SO2NH2 and derivs., heteroaryl, etc.; WCCX, or WCCY = (un)substituted aryl ring containing up to three heteroatoms; and their pharmaceutically acceptable salts, esters, amides, or prodrugs] were prepared as cyclin-dependent kinases 4 (cdk4) inhibitors. For example, II was prepard by cyclocondensation of guanidine III with 2-Cyclopentyl-6-hydroxymethylene-3-methoxycyclohex-2-en-1-one, dehydrogenation, and BOC-deprotection. II selectively inhibited cdk4 over cdk2 with IC50 values of 0.004 μM and 1.7 μM, resp. Thus, I and their formulations are useful for treating cell proliferative disorders, such as cancer, atherosclerosis, and restenosis (no data).

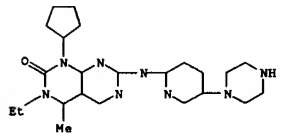
IT 733040-08-9P, 1-Cyclopentyl-3-ethyl-4-methyl-7-[5-(piperazin-1-yl)pyridin-2-ylamino]-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-one
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cdk4 inhibitor; preparation of 2-aminopyridines as cdk4 inhibitors for treating cell proliferative disorders)

RN 733040-08-9 CAPLUS

CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-cyclopentyl-3-ethyl-3,4-dihydro-4-

L11 ANSWER 11 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

methyl-7-[[5-(1-piperazinyl)-2-pyridinyl]amino]- (9CI) (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 12 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:412945 CAPLUS
DOCUMENT NUMBER: 140:423693
TITLE: Preparation of pyrimido Src tyrosine kinase inhibitors as anti-proliferative agents for the treatment of cancer
INVENTOR(S): Luk, Kin-Chun; Rossman, Pamela Loreen; Scheiblich, Stefan; So, Sung-Sau
PATENT ASSIGNEE(S): F. Hoffmann-La Roche A.-G., Switz.
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

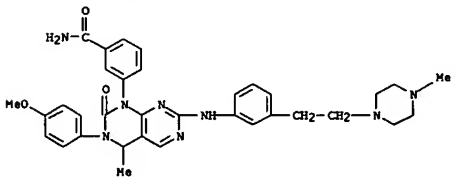
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004041821	A1	20040521	WO 2003-EP11892	20031027
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004110773	A1	20040610	US 2003-689438	20031020
US 2005075272	A1	20050407	US 2003-689235	20031020
CA 2502180	AA	20040521	CA 2003-2502180	20031027
EP 1560829	A1	20050810	EP 2003-758072	20031027
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003015912	A	20050913	BR 2003-15912	20031027
PRIORITY APPLN. INFO.:			US 2002-423670P P	20021104
			WO 2003-EP11892 W	20031027

OTHER SOURCE(S): MARPAT 140:423693
GI

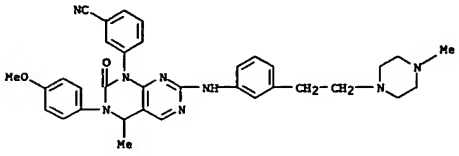
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB MovPyrimido compds. I (R1 = H, alkyl, substituted alkyl, aryl, heteroaryl, heterocycle, cycloalkyl, alkenyl, alkynyl; R2,R3,R4 independently = H, amine, alkoxy, sulfanyl, alkyl, cycloalkyl, alkenyl, alkynyl; R5, R6, R7, R8 independently = H, lower alkyl, amine, OH, alkoxy, sulfanyl, halogen, ketone, ester, amide, sulfonyl, CN; R9 = H, diester, ketone), that are selective inhibitors of the Src family of tyrosine kinases are prepared for the treatment of breast, colon, pancreatic, and hepatic cancers. Thus, 1-(2,4-dichloro-pyrimidin-5-yl)-ethanol was treated with phosphorus oxybromide and diisopropyl amine to give 2,4-dichloro-5-(1-bromoethyl)-pyrimidine which was treated with p-anisidine, potassium carbonate, and potassium iodide to give the corresponding amine. The above amine was

L11 ANSWER 12 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

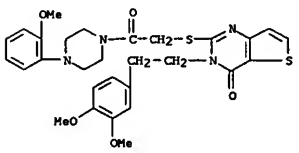


L11 ANSWER 12 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
reacted with 3-cyanophenyl isocyanate in toluene to give II. II was reacted with acetic acid 2-(3-amino-phenyl)-Et ester, followed by treatment with potassium carbonate in methanol to give III. III showed and IC50 of less than 1.0 μM against Src tyrosine kinase. Also disclosed are pharmaceutical compns. contg. these compds. and the use for treating cancer.
IT 690995-33-6P
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of pyrimido Src tyrosine kinase inhibitors as anti-proliferative agents for the treatment of cancer)
RN 690995-33-6 CAPLUS
CN Benzonitrile, 3-[3,4-dihydro-3-(4-methoxyphenyl)-4-methyl-7-[[3-[2-(4-methyl-1-piperazinyl)ethyl]phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-1(2H)-yl]- (9CI) (CA INDEX NAME)

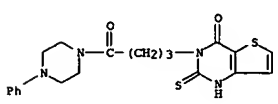


IT 690995-37-0P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pyrimido Src tyrosine kinase inhibitors as anti-proliferative agents for the treatment of cancer)
RN 690995-37-0 CAPLUS
CN Benzamide, 3-[3,4-dihydro-3-(4-methoxyphenyl)-4-methyl-7-[[3-[2-(4-methyl-1-piperazinyl)ethyl]phenyl]amino]-2-oxopyrimido[4,5-d]pyrimidin-1(2H)-yl]- (9CI) (CA INDEX NAME)

L11 ANSWER 13 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:402474 CAPLUS
DOCUMENT NUMBER: 141:157081
TITLE: Synthesis of Substituted Thienopyrimidine-4-ones
AUTHOR(S): Ivachtchenko, Alexandre; Kovalenko, Sergiy; Tkachenko, Olena V.; Parkhomenko, Oleksiy
CORPORATE SOURCE: Chemical Diversity Labs, Inc., San Diego, CA, 92121, USA
SOURCE: Journal of Combinatorial Chemistry (2004), 6(4), 573-583
CODEN: JCCHFF; ISSN: 1520-4766
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The parallel solution-phase synthesis of more than 3000 substituted thienopyrimidin-4-ones has been accomplished. Key reactions include assembly of the 2-thioxopyrimidin-4-one ring by condensation of isomeric aminothiophenecarboxylates or their appropriate reactive derivs. (isothiocyanates or dithiocarbamates) with isothiocyanates or amines. The libraries from libraries were then obtained in good yields and purities using solution-phase alkylation and acylation methodologies. Simple manual techniques for parallel reactions using special CombiSyn synthesizers were coupled with easy purification procedures (crystallization from the reaction mixts.) to give high-purity final products. The scope and limitations of the developed approach are discussed.
IT 440328-35-0P 688340-12-7P 688345-11-1P
RL: CPN (Combinatorial preparation); SPN (Synthetic preparation); CMBI (Combinatorial study); PREP (Preparation)
(solution-phase parallel synthesis of substituted thienopyrimidine-4-ones)
RN 440328-35-8 CAPLUS
CN Piperazine, 1-[[[3-[2-(3,4-dimethoxyphenyl)ethyl]-3,4-dihydro-4-oxothieno[3,2-d]pyrimidin-2-yl]thio]acetyl]-4-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)

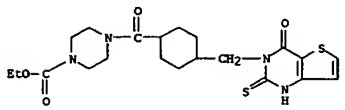


RN 688340-12-7 CAPLUS
CN Piperazine, 1-[4-(1,4-dihydro-4-oxo-2-thioxothieno[3,2-d]pyrimidin-3(2H)-yl)-1-oxobutyl]-4-phenyl- (9CI) (CA INDEX NAME)

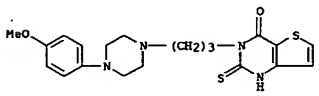


L11 ANSWER 13 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

RN 688345-11-1 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[[4-[(1,4-dihydro-4-oxo-2-thioxothieno[3,2-d]pyrimidin-3(2H)-yl)methyl]cyclohexyl]carbonyl]-, ethyl ester (9CI) (CA INDEX NAME)



IT 811451-07-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(solution-phase parallel synthesis of substituted thienopyrimidine-4-ones)
RN 811451-07-7 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(1H)-one, 2,3-dihydro-3-[3-[4-(4-methoxyphenyl)-1-piperazinyl]propyl]-2-thioxo- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 14 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:370923 CAPLUS
DOCUMENT NUMBER: 140:391302
TITLE: Preparation of benzo-1,3-diazepin-2-ones and related compounds as CGRP receptor antagonists for the treatment of migraine headaches
INVENTOR(S): Rudolf, Klaus; Mueller, Stephan Georg; Stenkamp, Dirk; Lustenberger, Philipp; Dreyer, Alexander; Bauer, Eckhart; Schindler, Marcus; Arndt, Kirsten; Doods, Henri
PATENT ASSIGNEE(S): Boehringer Ingelheim, Germany
SOURCE: PCT Int. Appl., 254 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004037811	A1	20040506	WO 2003-EP11763	20031023
WO 2004037811	C1	20050519		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10250082	A1	20040513	DE 2002-10250082	20021025
US 2004132716	A1	20040708	US 2003-685921	20031015
CA 2503462	AA	20040506	CA 2003-2503462	20031023
EP 1558601	A1	20050803	EP 2003-809318	20031023
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003015642	A	20050830	BR 2003-15642	20031023

PRIORITY APPLN. INFO.: DE 2002-10250082 A 20021025
US 2002-426167P P 20021114
WO 2003-EP11763 W 20031023

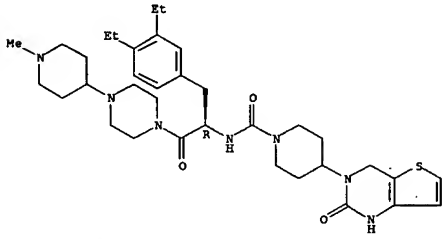
OTHER SOURCE(S): MARPAT 140:391302
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Title compds. I [A = O, S, phenylsulfonylimino, etc.; X = O, S, substituted imino, etc.; Y, Z = alkyl, difluoromethyl, trifluoromethyl, etc.; R1 = 5-7 membered aza, diaza, triaza, etc. heterocycle; R2 = H, phenylmethyl, alkyl, etc.; R3 = H, Ph, pyridinyl, etc.] and their pharmaceutically acceptable salts and formulations were prepared For example, benzo-1,3-diazepin-2-one II was prepared from 1-(3,4-diethylphenyl)ethanone in 8-steps. In human CGRP receptor binding

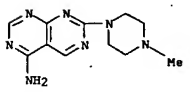
L11 ANSWER 14 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
affinity assays, compds. I exhibited IC50 values < 10000 nM. Compds. I are claimed useful for the treatment of migraine headaches.
IT 686296-77-5P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of benzo-1,3-diazepin-2-ones and related compds. as CGRP receptor antagonists for the treatment of migraine headaches)
RN 686296-77-5 CAPLUS
CN 1-Piperidinecarboxamide, N-[(1R)-1-[(3,4-diethylphenyl)methyl]-2-[4-(1-methyl-4-piperidinyl)-1-piperazinyl]-2-oxoethyl]-4-(1,4-dihydro-2-oxothieno[3,2-d]pyrimidin-3(2H)-yl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

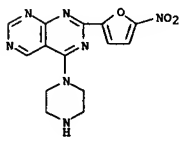


REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 15 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:205980 CAPLUS
DOCUMENT NUMBER: 142:197903
TITLE: Product class 22: other diazinodiazines
AUTHOR(S): Ishikawa, T.
CORPORATE SOURCE: Germany
SOURCE: Science of Synthesis (2004), 16, 1337-1397
CODEN: SSCYJ9
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Preparation of diazinodiazines is given with the exception of pteridines.
IT 114930-73-3P 836647-59-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of diazinodiazines)
RN 114930-73-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4-amine, 7-(4-methyl-1-piperazinyl)- (9CI) (CA INDEX NAME)



RN 836647-59-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 2-(5-nitro-2-furanyl)-4-(1-piperazinyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 208 THERE ARE 208 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:656757 CAPLUS
DOCUMENT NUMBER: 139:197507
TITLE: Preparation of piperazine derivatives as anti-inflammatory agents
INVENTOR(S): Dowle, Michael Dennis; Eldred, Colin David; Johnson, Martin Redpath; Redfern, Tracy Jane; Robinson, John Edward; Trivedi, Naimisha; Weller, Victoria
PATENT ASSIGNEE(S): Glaxo Group Limited, UK
SOURCE: PCT Int. Appl., 80 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003068759	A1	20030821	WO 2003-GB583	20030210
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1480959	A1	20041201	EP 2003-739556	20030210
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005528342	T2	20050922	JP 2003-567889	20030210
PRIORITY APPLN. INFO.:			GB 2002-3299 A	20020212
			WO 2003-GB583 W	20030210

OTHER SOURCE(S): MARPAT 139:197507
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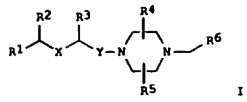
L11 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



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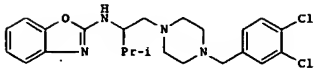


II

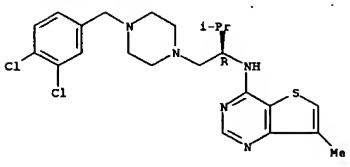
AB Title compds. I [R1 = (un)substituted (hetero)aryl; R2 = H, alkyl, alkenyl, cycloalkyl; X, Y = bond or (CH2)1-2 where X and Y do not both represent a bond; R3 = alkyl, alkenyl, (hetero)aryl, etc.; R4-5 = H, alkyl, carboxy, etc.; R6 = (hetero)aryl] are prepared For instance, 4-[(3,4-dichlorophenyl)methyl]-α-(1-methylethyl)-1-piperazineethaneamine is reacted with 2-chlorobenzoxazole (i-PrOH, i-Pr2NEt, reflux, 18 h),to give II. Compds. of the invention have functional pKi values in the range of 5.5-7.5 in the CCR-3 eosinophil chemotaxis assay. I are useful as anti-inflammatory agents.

IT **583868-85-3P 583868-86-4P 583868-88-6P**
583868-89-7P 583868-91-1P 583868-92-2P
583868-94-4P 583868-96-6P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of piperazine CCR-3 antagonists useful as anti-inflammatory agents)

RN 583868-85-3 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-[(1R)-1-[[4-[(3,4-dichlorophenyl)methyl]-1-piperazinyl]methyl]-2-methylpropyl]-7-methyl- (9CI) (CA INDEX NAME)

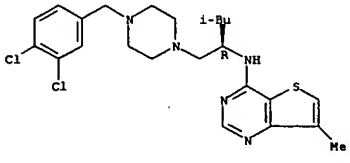
Absolute stereochemistry.

L11 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



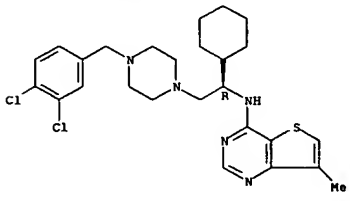
RN 583868-86-4 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-[(1R)-1-[[4-[(3,4-dichlorophenyl)methyl]-1-piperazinyl]methyl]-3-methylbutyl]-7-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 583868-88-6 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-[(1R)-1-cyclohexyl-2-[4-[(3,4-dichlorophenyl)methyl]-1-piperazinyl]ethyl]-7-methyl- (9CI) (CA INDEX NAME)

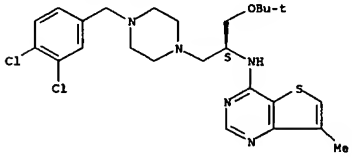
Absolute stereochemistry.



RN 583868-89-7 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-[(1S)-2-[4-[(3,4-dichlorophenyl)methyl]-1-piperazinyl]-1-[(1,1-dimethylethoxy)methyl]ethyl]-7-methyl- (9CI) (CA INDEX NAME)

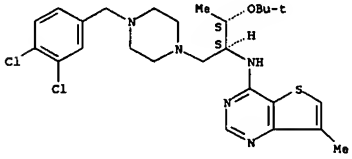
L11 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

Absolute stereochemistry.



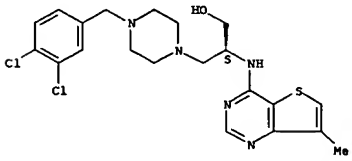
RN 583868-91-1 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-[(1S,2S)-1-[[4-[(3,4-dichlorophenyl)methyl]-1-piperazinyl]methyl]-2-(1,1-dimethylethoxy)propyl]-7-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 583868-92-2 CAPLUS
CN 1-Piperazinepropanol, 4-[(3,4-dichlorophenyl)methyl]-β-[(7-methylthieno[3,2-d]pyrimidin-4-yl)amino]-, (βS)- (9CI) (CA INDEX NAME)

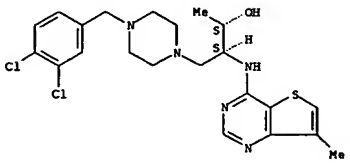
Absolute stereochemistry.



RN 583868-94-4 CAPLUS
CN 1-Piperazinepropanol, 4-[(3,4-dichlorophenyl)methyl]-α-methyl-β-[(7-methylthieno[3,2-d]pyrimidin-4-yl)amino]-, (αS,βS)- (9CI) (CA INDEX NAME)

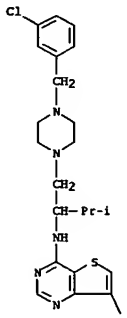
L11 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

Absolute stereochemistry.



RN 583868-96-6 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-[1-[[4-[(3-chlorophenyl)methyl]-1-piperazinyl]methyl]-2-methylpropyl]-7-methyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

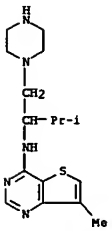
IT 583870-47-7

L11 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

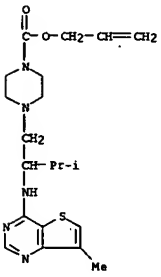
L11 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of piperazine CCR-3 antagonists useful as anti-inflammatory agents)

RN 583870-47-7 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, 7-methyl-N-[2-methyl-1-(1-piperazinylmethyl)propyl]- (9CI) (CA INDEX NAME)



IT 583870-45-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of piperazine CCR-3 antagonists useful as anti-inflammatory agents)

RN 583870-45-5 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[3-methyl-2-[(7-methylthieno[3,2-d]pyrimidin-4-yl)amino]butyl]-, 2-propenyl ester (9CI) (CA INDEX NAME)



L11 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

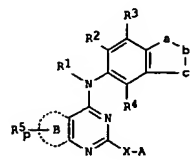
ACCESSION NUMBER: 2003:570986 CAPLUS
DOCUMENT NUMBER: 139:133579
TITLE: Preparation of fused pyrimidines as Rho-kinase inhibitors useful for inhibiting tumor growth and treating disorders such as erectile dysfunction
INVENTOR(S): Nagarathnam, Dhanapalan; Khire, Uday; Asgari, Davoud; Shao, Jianxing; Liu, Xiao-Gao; Wang, Chunguang; Hart, Barry; Weber, Olaf; Lynch, Mark; Zhang, Lei; Wang, Lei
PATENT ASSIGNEE(S): Bayer Corporation, USA
SOURCE: PCT Int. Appl., 152 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003059913	A1	20030724	WO 2003-US606	20030110
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2472619	AA	20030724	CA 2003-2472619	20030110
US 2004014755	A1	20040122	US 2003-339393	20030110
EP 1465900	A1	20041013	EP 2003-701278	20030110
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005523251	T2	20050804	JP 2003-560016	20030110

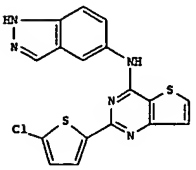
PRIORITY APPLN. INFO.:			
US 2002-346628P	P	20020110	
WO 2003-US606	W	20030110	

OTHER SOURCE(S): MARPAT 139:133579
GI

L11 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



I



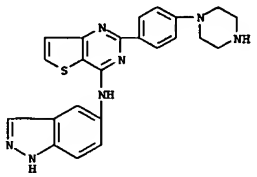
II

AB Disclosed are (shown as I; variables defined below; e.g. 2-(5-chloro-2-thienyl)-N-(1H-indazol-5-yl)thieno[3,2-d]pyrimidin-4-amine (shown as II)), their synthesis, and their use as Rho-kinase inhibitors (no data). These compds. of the present invention are useful for inhibiting tumor growth, treating erectile dysfunction, and treating other indications mediated by Rho-kinase, e.g., coronary heart disease. For I: X is -(CH2)x-, -O-(CH2)n-, -S-(CH2)n-, -NR7-CO-(CH2)n-, -NR7-SO2-(CH2)n-, -NR7-(CH2)n-, or -(O)C-NR7- (n = 0-3; x = 0-3); p = 0-3; a and c = -CR5=, -N=, or -NR6-, wherein one of a or c is -NR6-, and b is -CR5= or -N=; A is H, halogen, -CO-OR8, -CO-R8, cyano, -OR8, -NR8R9, -CO-NR8R9, -NR8-CO-R9, -NR8-CO-OR9, -NR8-SO2-R9, -SR8, -SO2-R8, -SO2-NR8R9, NR8-CO-NHR9, or A is cyclohexyl or C5-12-aryl or C5-12-heteroaryl. Ring B = a fused 5- or 6-membered heterocyclic ring containing 1-2 O, N, and/or S atoms and 1-5 C atoms; R1, and R6-R11 are each independently H and C1-6 alkyl; R2-R5 = C1-10-alkyl, C2-10-alkenyl, C3-C10 cycloalkyl, C3-10-cycloalkenyl, partially unsatd. C5-10-heterocyclyl, aryl, heteroaryl, halogen, -CO-OR10, -OCOR10, -OCO2R10, -CHO, cyano, -OR16, -NR10R15, nitro, -CO-NR10R11, -NR10-CO-R12, -NR10-CO-OR11, -NR10-SO2-R12, -SR16, -SOR16, -SO2-R16, -SO2-NR10R11, NR10-CO-NHR11, amidino, guanidino, sulfo, -B(OH)2, -OCON(R10)2, or -NR10CON(R10)2. R12 is H, C1-6-alkyl or C5-10-aryl, R13 is H, C1-6-alkyl or C1-6-alkoxy, R14 is lower alkyl or phenyl; R15 is lower alkyl, halogen, amino, N-lower alkyl amino, N,N-dilower alkylamino, N-lower alkanoylamino, OH, CN, COOR10, -COR14 or -OCOR14; R16 is H, C1-6-alkyl (un)substituted by halogen, up to perhalo, or C5-10 heteroaryl; with the provisos that A is not H when x is 0; -X-A is not CH3 when B = a thieno[3,2-b] fused ring, and b and c are -CR5=, and a is NH; and A is not Ph when X is NH, B forms an imidazo fused ring, and -a-b-c- is -CR5:N-NR6- or -NR6:N-CR5-; addnl. details are given in the claims. Although the methods of preparation are not claimed, .apprx.10 example prepns. and

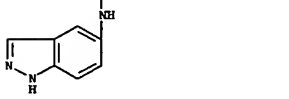
L11 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
characterization data for many I are included.

IT 568580-86-9P, 2-(4-Piperazinophenyl)-N-(1H-indazol-5-yl)thieno[3,2-d]pyrimidin-4-amine 568581-74-8P, 2-[4-(3-Methoxyphenyl)piperazino]-N-(1H-indazol-5-yl)thieno[3,2-d]pyrimidin-4-amine 568582-67-2P, N-[4-(4-Methylpiperazino)phenyl]-4-(1H-indazol-5-ylamino)thieno[3,2-d]pyrimidin-2-amine 568582-95-6P, 2-(4-Phenylpiperazino)-4-(1H-indazol-5-ylamino)thieno[3,2-d]pyrimidine 568582-97-8P, 2-[4-(4-Methoxyphenyl)piperazino]-4-(1H-indazol-5-ylamino)thieno[3,2-d]pyrimidine
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(drug candidate; preparation of fused pyrimidines as Rho-kinase inhibitors
useful for inhibiting tumor growth and treating disorders such as erectile dysfunction)

RN 568580-86-9 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indazol-5-yl-2-[4-(1-piperazinyl)phenyl]- (9CI) (CA INDEX NAME)

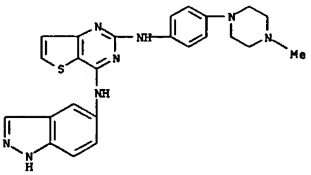


RN 568581-74-8 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indazol-5-yl-2-[4-(3-methoxyphenyl)-1-piperazinyl]- (9CI) (CA INDEX NAME)

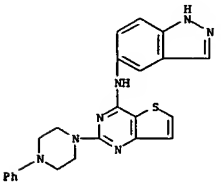


RN 568582-67-2 CAPLUS

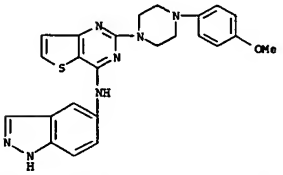
L11 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
CN Thieno[3,2-d]pyrimidine-2,4-diamine, N4-1H-indazol-5-yl-N2-[4-(4-methyl-1-piperazinyl)phenyl]- (9CI) (CA INDEX NAME)



RN 568582-95-6 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indazol-5-yl-2-(4-phenyl-1-piperazinyl)- (9CI) (CA INDEX NAME)



RN 568582-97-8 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indazol-5-yl-2-[4-(4-methoxyphenyl)-1-piperazinyl]- (9CI) (CA INDEX NAME)



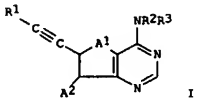
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

L11 ANSWER 18 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:511153 CAPLUS
DOCUMENT NUMBER: 139:69281
TITLE: Preparation of alkynyl thienopyrimidines as protein tyrosine kinase inhibitors useful against cancer and other disorders
INVENTOR(S): Caferro, Thomas R.; Chamberlain, Stanley Dawes; Donaldson, Kelly Horne; Harris, Philip Anthony; Gaul, Michael David; Uehling, David Edward; Vanderwall, Dana Edward
PATENT ASSIGNEE(S): Smithkline Beecham Corporation, USA
SOURCE: PCT Int. Appl., 240 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003053446	A1	20030703	WO 2002-US39872	20021213
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1463507	A1	20041006	EP 2002-805582	20021213
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2005516023	T2	20050602	JP 2003-554203	20021213
US 2005009845	A1	20050113	US 2004-499247	20040617
PRIORITY APPLN. INFO.:			US 2001-342207P P	20011219
			WO 2002-US39872 W	20021213

OTHER SOURCE(S): MARPAT 139:69281
GI



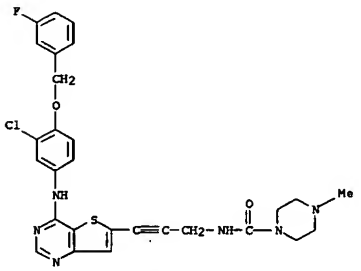
I

AB The present invention relates to alkynyl thienopyrimidines (shown as I; variables defined below; e.g. N-(2-benzyl-1H-benzimidazol-5-yl)-6-ethynylthieno[3,2-d]pyrimidin-4-amine), salts thereof, as well as use and

L11 ANSWER 18 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
prepn. of the same. These compds. are inhibitors of various protein tyrosine kinases (PTKs) of the ErbB family and consequently are useful in the treatment of disorders mediated by aberrant activity of such kinases. Semiquant. pIC50 values for inhibition of ErbB-2 tyrosine kinase and IC50 values for cytotoxicity for HFF as a representative human normal cell line are reported for 11 examples of I. For I: one of A1 and A2 is S and the other is CH; R1 is H or -(CR11R11)n-R5; R2 is H or OC1-6alkyl; R3 = aryl (un)substituted with ≥1 halo, alkynyl, -CF3, -(CH2)nOR4, -(CH2)nSR4, -NO2, C1-6alkyl, -CN, -SO2R9, -(CH2)naryl and -(CH2)nNR9R10, and heteroaryl (un)substituted with ≥1 halo, alkynyl, -CF3, -(CH2)nOR4, -(CH2)nSR4, -NO2, C1-6alkyl, -CN, -SO2R9, -(CH2)naryl and -(CH2)nNR9R10; n = 0-6; addnl. details are given in the claims. Although the methods of prepn. are not claimed, approx.120 example prepns. of I are included.

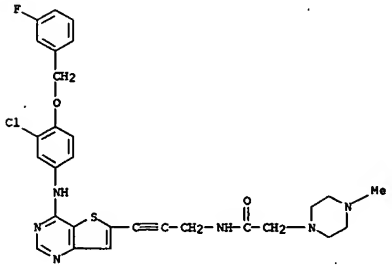
IT **552294-35-6P**, N-[3-[4-[[3-Chloro-4-[(3-fluorobenzyl)oxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]prop-2-ynyl]-4-methylpiperazine-1-carboxamide **552294-44-7P**, N-[3-[4-[[3-Chloro-4-[(3-fluorobenzyl)oxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]prop-2-ynyl]-2-(4-methylpiperazin-1-yl)acetamide **552295-55-3P**, N-[3-[4-[[3-Chloro-4-[(3-fluorobenzyl)oxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]prop-2-ynyl]-4-[(4-methylpiperazin-1-yl)methyl]benzamide
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(drug candidate; preparation of alkynyl thienopyrimidines as protein tyrosine kinase inhibitors useful against cancer and other disorders)

RN 552294-35-6 CAPLUS
CN 1-Piperazinecarboxamide, N-[3-[4-[[3-chloro-4-[(3-fluorophenyl)methoxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]-2-propynyl]-4-methyl- (9CI) (CA INDEX NAME)

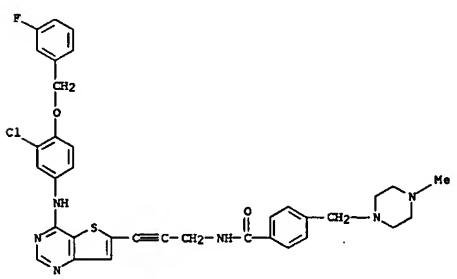


RN 552294-44-7 CAPLUS
CN 1-Piperazineacetamide, N-[3-[4-[[3-chloro-4-[(3-

L11 ANSWER 18 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
fluorophenyl)methoxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]-2-propynyl]-4-methyl- (9CI) (CA INDEX NAME)



RN 552295-55-3 CAPLUS
CN Benzamide, N-[3-[4-[[3-chloro-4-[(3-fluorophenyl)methoxy]phenyl]amino]thieno[3,2-d]pyrimidin-6-yl]-2-propynyl]-4-[(4-methyl-1-piperazinyl)methyl]- (9CI) (CA INDEX NAME)



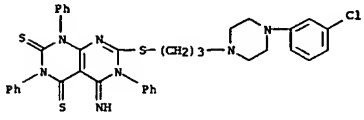
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 19 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:393703 CAPLUS
DOCUMENT NUMBER: 139:245969
TITLE: Synthesis and antiproliferative activity of basic thioanalogues of merbarone
AUTHOR(S): Ranise, Angelo; Spallarossa, Andrea; Schenone, Silvia; Bruno, Olga; Bondavalli, Francesco; Pani, Alessandra; Marongiu, Maria Elena; Mascia, Valeria; La Colla, Paolo; Loddo, Roberta
CORPORATE SOURCE: Dipartimento di Scienze Farmaceutiche, Universita degli Studi di Genova, Genoa, 16132, Italy
SOURCE: Bioorganic & Medicinal Chemistry (2003), 11(12), 2575-2589
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:245969

AB Three series of 5-substituted 1,3-diphenyl-6-(ω-dialkyl- and ω-cyclo-aminoalkyl)thio-2-thiobarbiturates were synthesized as polysubstituted thioanalogues of merbarone, a topoisomerase II inhibitor acting on the catalytic site. To better understand pharmacophore requirements, a forth series of conformationally constrained analogs was also prepared Some of these compds. were active in the low micromolar concentration range (IC50: 3.3-4.3 μM), and other compds. showed IC50 values between 10 and 15.5 μM. In contrast, some other were inactive. Cytotoxicity data provided from N.C.I. on selected compds. provided evidence that these compds. were endowed with potent antiproliferative activity against leukemia and prostate cell lines (GI50 up to 0.01 μM). In general, bicyclic derivs. were up to 10-fold more potent than monocyclic counterparts against solid tumor-derived cell lines. Structure-activity relationships (SAR) studies indicated that, in general, a certain tolerability in length of the alkyl side chains and in shape of distal amines is allowed in the four series, but in the monocyclic derivs. antiproliferative activity was strongly affected by the nature of the 5-substituents (COOC2H5>COCH3≈C6H5). Some compds. were also evaluated against KB cell subclones expressing altered levels of topoisomerases or the multidrug resistance phenotype (MDR). In both cases the above compds. showed a decrease in potency. In enzyme assays two compds. turned out to be inhibitors of topoisomerase II as merbarone.

IT **596127-94-5P**
RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation and structure-antiproliferative activity relationships of substituted thioanalogues)

RN 596127-94-5 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dithione, 7-[[3-[4-(3-chlorophenyl)-1-piperazinyl]propyl]thio]-5,6-dihydro-5-imino-1,3,6-triphenyl- (9CI) (CA INDEX NAME)



L11 ANSWER 19 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

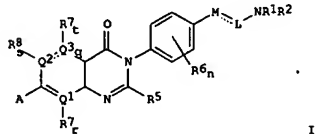
REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 20 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:319881 CAPLUS
DOCUMENT NUMBER: 138:338165
TITLE: Preparation of pyrimidinones as melanin concentrating hormone receptor 1 antagonists
INVENTOR(S): Carpenter, Andrew J.; Cooper, Joel P.; Handlon, Anthony L.; Hertzog, Donald L.; Hyman, Clifton E.; Guo, Yu C.; Speake, Jason D.; Witty, David Richard
PATENT ASSIGNEE(S): SmithKline Beecham PLC, UK
SOURCE: PCT Int. Appl., 138 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003033476	A1	20030424	WO 2002-US32739	20021015
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2463508	AA	20030424	CA 2002-2463508	20021015
EP 1442025	A1	20040804	EP 2002-801692	20021015
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
BR 2002013040	A	20041005	BR 2002-13040	20021015
NZ 531911	A	20041126	NZ 2002-531911	20021015
JP 2005510487	T2	20050421	JP 2003-536216	20021015
ZA 2004002672	A	20050405	ZA 2004-2672	20040405
NO 2004001503	A	20040513	NO 2004-1503	20040413
ZA 2004002814	A	20050413	ZA 2004-2814	20040413
US 2004220404	A1	20041104	US 2004-492641	20040414
PRIORITY APPLN. INFO.:			GB 2001-24627 A	20011015
			WO 2002-US32739 W	20021015

OTHER SOURCE(S): MARPAT 138:338165
GI



I

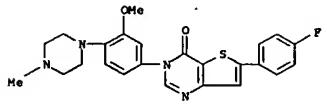
L11 ANSWER 20 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

AB Pyrimidinones (shown as I; variables defined below; e.g. 3-[3-methoxy-4-[2-(1-piperidinyl)ethoxy]phenyl]-7-phenyl-4(3H)-quinazolinone) comprising a pharmaceutically acceptable salt or solvate thereof, formulations, processes of preparing, and methods of administering to mammals are provided. I are antagonists of the melanin concentrating hormone receptor 1 (MCHR1 or 11CBy). The compds. described in the examples have pIC50 values >7 towards MCHR1; for example, 7.1, 7.2 and 9.1 for 3-[3-methoxy-4-[2-(1-piperidinyl)ethoxy]phenyl]-7-phenyl-4(3H)-quinazolinone, 3-[3-methoxy-4-[2-(1-pyrrolidinyl)ethoxy]phenyl]-7-[4-(trifluoromethyl)phenyl]-4(3H)-quinazolinone and 6-(4-chlorophenyl)-3-[3-methoxy-4-(2-pyrrolidin-1-ylethoxy)phenyl]thieno[3,2-d]pyrimidin-4(3H)-one. Several methods of preparation are claimed and .apprx.110 example preprns. of I are included. For example, 3-[3-methoxy-4-[2-(1-piperidinyl)ethoxy]phenyl]-7-phenyl-4(3H)-quinazolinone was prepared starting from 2,2-diethoxyethanol and 2-chloro-5-nitroanisole via intermediates 4-(2,2-diethoxyethoxy)-3-methoxyaniline, 4-chloro-N-[4-(2,2-diethoxyethoxy)-3-methoxyphenyl]-2-nitrobenzamide, 7-chloro-3-[4-(2,2-diethoxyethoxy)-3-methoxyphenyl]-4(3H)-quinazolinone, and 3-[4-(2,2-diethoxyethoxy)-3-methoxyphenyl]-7-phenyl-4(3H)-quinazolinone with yields of 41, 86, 79, 41 and 76%, resp. For I: A = aryl or heteroaryl, optionally substituted by one to four C1-6 straight or branched alkyl, alkenyl, halo, amino, alkylamino, dialkylamino, hydroxy, C1-6 alkoxy, cyano, or alkylthio groups; a dashed line = an optional double bond; q, r, s, and t are each independently 0 or 1; when q is 1, the dashed line is a double bond; Q1 and Q3 are each independently C or N; when q is 0 then Q2 is N, S, or O; when q is 1, then Q2 is C or N; when q is 1 and Q2 is N, then s is O; when Q2 is S or O, s is 0; when q is 1 and Q2 is C or when q is 0 and Q2 is N, then R8 = H, C1-6 straight or branched alkyl, C3-6 cycloalkyl, C1-6 alkoxy, amino, alkylamino, dialkylamino, hydroxy, cyano, alkylthio, and halo; when Q1 or Q3 is C, then each corresponding R7 = H, C1-6 straight or branched alkyl, C3-6 cycloalkyl, C1-6 alkoxy, amino, alkylamino, dialkylamino, hydroxy, cyano, alkylthio, and halo; when Q1 is N, r is 0; when Q3 is N, t is 0. R5 = H, C1-6 straight or branched alkyl, C3-6 cycloalkyl and C1-3 alkylthio; each R6 = H, C1-6 straight or branched alkyl, C1-6 alkoxy, trihaloalkyl, trihaloalkoxy, amino, alkylamino, dialkylamino, hydroxy, cyano, acetyl, alkylthio, and halo; and n is 1 to 4; M = O, S, S(O)2, S(O)2NR, NR, C(O), C(R)2, NC(O)R, and NS(O)2R; wherein R = H, Ph, heteroaryl, C1-6 straight or branched alkyl, and C3-6-cycloalkyl; L is C2-3 alkyl, C2-3-alkenyl, or -C(O)(CH2)-. (i) R1 and R2 each independently = H, C1-6 straight or branched alkyl, C3-6-cycloalkyl, and a 5- or 6-membered heterocycle; or (ii) R1 and R2 may be aryl and a 5- or 6-membered heteroaryl containing 1, 2, or 3 heteroatoms = N, O, and S; or (iii) R1 and R2 together with the N atom to which they are bonded form a 4-8 membered heterocyclic ring or a 7-11 membered bicyclic heterocyclic ring; or (iv) R1 and R2 may be independently linked either to the group L or linked to the group M when M = S(O)2NR, NR, C(R)2, NC(O)R, and NS(O)2R; addnl. details are given in the claims.

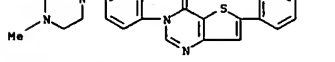
IT **515142-49-1P**, 6-(4-Fluorophenyl)-3-[3-methoxy-4-(4-methylpiperazin-1-yl)phenyl]thieno[3,2-d]pyrimidin-4(3H)-one **515142-60-6P**, 6-(4-Chlorophenyl)-3-[4-(4-methyl-1-piperazinyl)phenyl]thieno[3,2-d]pyrimidin-4(3H)-one
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

L11 ANSWER 20 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
(drug candidate; prepn. of pyrimidinones as melanin-concg. hormone receptor 1 antagonists)

RN 515142-49-1 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-fluorophenyl)-3-[3-methoxy-4-(4-methyl-1-piperazinyl)phenyl]- (9CI) (CA INDEX NAME)



RN 515142-60-6 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 6-(4-chlorophenyl)-3-[4-(4-methyl-1-piperazinyl)phenyl]- (9CI) (CA INDEX NAME)



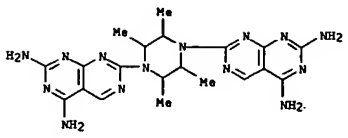
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 21 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:22605 CAPLUS
DOCUMENT NUMBER: 138:66661
TITLE: Heterocyclic compounds, preparation, and use as D-alanyl-D-alanine ligase inhibitors and antibacterial agents
INVENTOR(S): Moe, Scott T.; Ala, Paul J.; Perola, Emanuele; Faerman, Carlos H.; Clement, Jacob J.; Ali, Janid A.; Will, Paul M.; Marchese, Salvatore A.; Magee, Andrew S.; Gazzaniga, John V.; Farady, Christopher; Navia, Manuel A.; Connelly, Patrick R.
PATENT ASSIGNEE(S): Essential Therapeutics, Inc., USA
SOURCE: PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

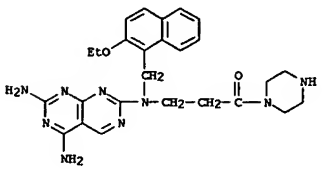
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003001887	A2	20030109	WO 2002-US20567	20020628
WO 2003001887	A3	20030821		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2451800	AA	20030109	CA 2002-2451800	20020628
EP 1411949	A2	20040428	EP 2002-759101	20020628
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
EE 200400042	A	20041015	EE 2004-42	20020628
PRIORITY APPLN. INFO.:			US 2001-301685	A 20010628
			US 2001-301685P	P 20010628
			WO 2002-US20567	W 20020628

OTHER SOURCE(S): MARPAT 138:66661
AB The invention is based on the discovery of a new class of heterocyclic compds. having e.g. antibacterial properties. The D-Ala-D-Ala ligase enzyme is a critical pathway enzyme in the bacterial cell wall synthesis. The compds. can bind to and inhibit the enzyme D-Ala-D-Ala ligase. The activity of the compds., combined with their ability to cross bacterial cell membranes, makes them suitable for use as antibacterial drugs or other antibacterial applications.
IT 481044-71-7 481045-27-6
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(heterocyclic compds., preparation, and use as D-alanyl-D-alanine ligase inhibitors and antibacterial agents)
RN 481044-71-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4-diamine, 7,7'-(2,3,5,6-tetramethyl-1,4-piperazinediyl)bis- (9CI) (CA INDEX NAME)

L11 ANSWER 21 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



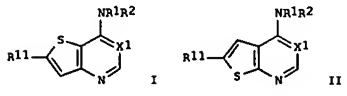
RN 481045-27-6 CAPLUS
CN Piperazine, 1-[3-[(5,7-diaminopyrimido[4,5-d]pyrimidin-2-yl)[(2-ethoxy-1-naphthalenyl)methyl]amino]-1-oxopropyl]- (9CI) (CA INDEX NAME)



L11 ANSWER 22 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:942789 CAPLUS
DOCUMENT NUMBER: 138:24721
TITLE: Preparation of thienopyrimidines and thienopyridines as anticancer agents
INVENTOR(S): Munchhof, Michael John; Sobolov-Jaynes, Susan Beth; Mark, Matthew Arnold
PATENT ASSIGNEE(S): Pfizer Inc., USA
SOURCE: U.S., 37 pp., Cont.-in-part of Appl. No. PCT/IB98/1691.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

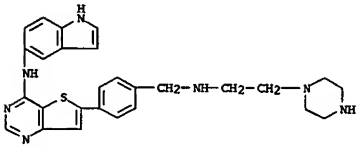
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6492383	B1	20021210	US 2000-502129	20000210
WO 9924440	A1	19990520	WO 1998-IB1691	19981022
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2003162795	A1	20030828	US 2002-244324	20020916
PRIORITY APPLN. INFO.:			WO 1998-IB1691	A2 19981022
			US 2001-65097P	P 20011111
			US 1997-65097P	P 19971111
			US 2000-502129	A1 20000210

OTHER SOURCE(S): MARPAT 138:24721
GI



AB The title compds. [I and II; X1 = CH; R1 = H, alkyl, C(O)alkyl; R2 = aryl, heterocyclic; R11 = H, alkyl, C(O)NR6R9, etc.; R6 = H, alkyl, etc.; R9 = H, alkyl, etc.] and analogs useful for treating hyperproliferative disorders, were prepared E.g., a multi-step synthesis of I [X1 = N; R1 = indol-5-yl; R2 = H; R11 = Br], was given. Compds. I are effective at 0.2-2.5 g/day for a 70 kg human.
IT 225381-19-1P, (1H-Indol-5-yl)[6-[4-[((2-(piperazinyl)ethyl]amino)methyl]phenyl]thieno[3,2-d]pyrimidin-4-yl]amine 225381-26-0P, (1H-Indol-5-yl)[6-[4-(4-methylpiperazin-1-ylmethyl)phenyl]thieno[3,2-d]pyrimidin-4-yl]amine methanesulfonate 225381-46-4P, 1-[4-[4-[4-((1H-Indol-5-yl)amino)thieno[3,2-d]pyrimidin-6-yl]benzyl]piperazin-1-yl]ethanone 225381-53-3P, Furan-2-yl[4-[4-[4-((1H-indol-5-yl)amino)thieno[3,2-d]pyrimidin-6-yl]benzyl]piperazin-1-yl]methanone 225382-34-3P, [4-(4-Methylpiperazin-1-yl)phenyl](6-phenylthieno[3,2-d]pyrimidin-4-

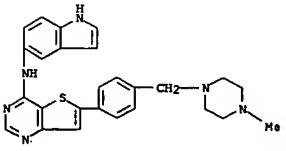
L11 ANSWER 22 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
yl)amine
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of thienopyrimidines and thienopyridines as anticancer agents)
RN 225381-19-1 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indol-5-yl-6-[4-[[[2-(1-piperazinyl)ethyl]amino]methyl]phenyl]- (9CI) (CA INDEX NAME)



RN 225381-26-0 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indol-5-yl-6-[4-[(4-methyl-1-piperazinyl)methyl]phenyl]-, monomethanesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 225381-25-9
CMF C26 H26 N6 S

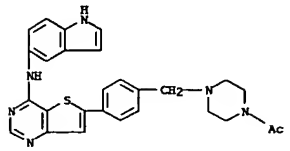


CM 2

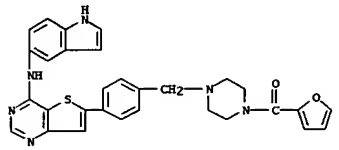
CRN 75-75-2
CMF C H4 O3 S

RN 225381-46-4 CAPLUS
CN Piperazine, 1-acetyl-4-[[4-[4-(1H-indol-5-ylamino)thieno[3,2-d]pyrimidin-6-

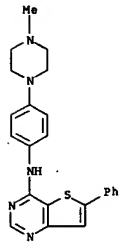
L11 ANSWER 22 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
yl]phenyl]methyl]- (9CI) (CA INDEX NAME)



RN 225381-53-3 CAPLUS
CN Piperazine, 1-(2-furanylcarbonyl)-4-[[4-[4-(1H-indol-5-ylamino)thieno[3,2-d]pyrimidin-6-yl]phenyl]methyl]- (9CI) (CA INDEX NAME)



RN 225382-34-3 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-[4-(4-methyl-1-piperazinyl)phenyl]-6-phenyl- (9CI) (CA INDEX NAME)

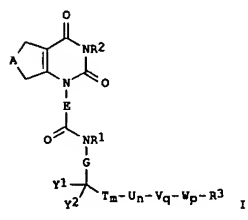


L11 ANSWER 22 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 23 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:366971 CAPLUS
DOCUMENT NUMBER: 136:386124
TITLE: Preparation of amidoalkyluracils as inhibitors of poly(ADP-ribose)synthetase (PARS)
INVENTOR(S): Albrecht, Barbara; Gerisch, Michael; Handke, Gabriele; Jensen, Axel; Krahn, Thomas; Nickl, Werner; Oehme, Felix; Schlemmer, Karl-Heinz; Steinhagen, Henning
PATENT ASSIGNEE(S): Bayer Ag, Germany
SOURCE: Ger. Offen., 70 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10056312	A1	20020516	DE 2000-10056312	20001114
CA 2428335	AA	20020523	CA 2001-2428335	20011102
WO 2002040455	A1	20020523	WO 2001-EP12694	20011102
WO 2002040455	C1	20020718		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002024825	A5	20020527	AU 2002-24825	20011102
EP 1339699	A1	20030903	EP 2001-994632	20011102
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2005075347	A1	20050407	US 2003-416622	20031229
PRIORITY APPLN. INFO.:			DE 2000-10056312 A	20001114
			WO 2001-EP12694 W	20011102

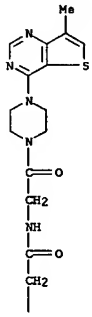
OTHER SOURCE(S): MARPAT 136:386124
GI



AB Title compds. [I; A = D, CH2D, DCH2, CH:CHCH2, CH2CH:CH, CH2CH2D, DCH2CH2, CH2DCH2; D = CH2, O, S; E, G = (substituted) alkylene, cycloalkylene; T =

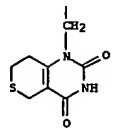
L11 ANSWER 23 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
CH2; U, V = (substituted) aryl, heterocyclyl; W = O, S, CO2, OCO, NR4; R4 = H, alkyl; m, n, q, p = 0, 1; X = O, S, NR5; R5 = H, alkyl, PhCH2; Y1 = H; Y2 = OH; Y1Y2 = O, S, NR6; R6 = H, alkyl, PhCH2; R1 = H, alkyl, (halo)cycloalkyl; R2 = H, alkoxycarbonyl; R3 = (substituted) aryl, heterocyclyl] were prepd. Thus, a mixt. of 3-(2,4-dioxo-3,4,5,6,7,8-hexahydro-1(2H)-quinazolinyl)propanoic acid (prepn. given) and 2-(2-naphthyl)-2-oxo-1-ethanamine hydrochloride in CH2Cl2 was treated with diisopropylamine and 4-dimethylaminopyridine, followed by addn. of 1,3-dicyclohexylcarbodiimide at 0° and stirring for 18 h at room temp., to give 48% 3-(2,4-dioxo-3,4,5,6,7,8-hexahydro-1(2H)-quinazolinyl)-N-[2-(2-naphthyl)-2-oxo-1-ethyl]propanamide. Several I inhibited PARS with IC50 = 8.5-80 nM.
IT **425635-10-5P 425635-30-9P**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of amidoalkyluracils as inhibitors of poly(ADP-ribose)synthetase (PARS))
RN 425635-10-5 CAPLUS
CN 2H-Thiopyrano[4,3-d]pyrimidine-1(5H)-propanamide, 3,4,7,8-tetrahydro-N-[2-[4-(7-methylthieno[3,2-d]pyrimidin-4-yl)-1-piperazinyl]-2-oxoethyl]-2,4-dioxo- (9CI) (CA INDEX NAME)

PAGE 1-A



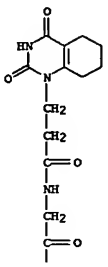
L11 ANSWER 23 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

PAGE 2-A



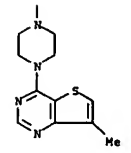
RN 425635-30-9 CAPLUS
CN 1(2H)-Quinazolinepropanamide, 3,4,5,6,7,8-hexahydro-N-[2-[4-(7-methylthieno[3,2-d]pyrimidin-4-yl)-1-piperazinyl]-2-oxoethyl]-2,4-dioxo- (9CI) (CA INDEX NAME)

PAGE 1-A



L11 ANSWER 23 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

PAGE 2-A



L11 ANSWER 24 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:31424 CAPLUS
DOCUMENT NUMBER: 136:102393
TITLE: Preparation of quinazolinylureas for treatment of solid tumors.
PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.; Astrazeneca Uk Ltd.
SOURCE: PCT Int. Appl., 149 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002002534	A1	20020110	WO 2001-GB2874	20010628
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: EP 2000-401897 A 20000703
OTHER SOURCE(S): MARPAT 136:102393

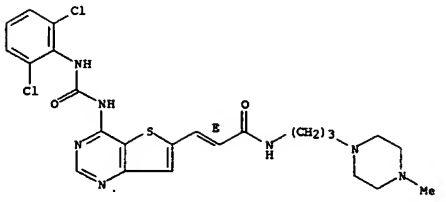
AB Use of Q1R2NC(:Z)NR3Q2 [Q1 = (substituted) (fused) quinazolinyl, quinolinyl, etc.; Q2 = (substituted) aryl, aralkyl, arylcycloalkyl, heteroaryl, heteroarylalkyl; R2, R3 = H, alkyl; R2R3 = CH2, CH2CH2, (CH2)3] as antiinvasive agents in the containment and/or treatment of solid tumor disease is claimed. Thus, 2,6-dichlorophenyl isocyanate was added to a solution of 4-amino-6-methoxy-7-(N-methylpiperidin-4-ylmethoxy)quinazoline (preparation given) in CH2Cl2/DMF followed by stirring to give 1-(2,6-dichlorophenyl)-3-[6-methoxy-7-(N-methylpiperidin-4-ylmethoxy)quinazolin-4-yl]urea. Title compds. inhibited proliferation of NIH 3T3 fibroblasts with IC50 in the range, for example, of 0.001-10 μM.

IT 320364-87-2P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of quinazolinylureas for treatment of solid tumors)

RN 320364-87-2 CAPLUS
CN 2-Propenamide, 3-[4-[[[(2,6-dichlorophenyl)amino]carbonyl]amino]thieno[3,2-d]pyrimidin-6-yl]-N-[3-(4-methyl-1-piperazinyl)propyl]-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

L11 ANSWER 24 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

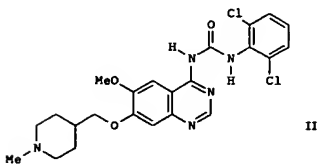


REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 25 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:676589 CAPLUS
DOCUMENT NUMBER: 135:227013
TITLE: Preparation of quinazolinylureas and analogs as VEGF receptor antagonists
INVENTOR(S): Hennequin, Laurent Francois Andre; Crawley, Graham Charles; McKerrecher, Darren; Ple, Patrick; Poyser, Jeffrey Philip; Lambert, Christine Marie Paul
PATENT ASSIGNEE(S): Astrazeneca AB, Swed.; Astrazeneca UK Limited
SOURCE: PCT Int. Appl., 170 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001066099	A2	20010913	WO 2001-GB863	20010301
WO 2001066099	A3	20020321		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1272185	A2	20030108	EP 2001-907938	20010301
EP 1272185	B1	20050727		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003525897	T2	20030902	JP 2001-564752	20010301
AT 300303	E	20050815	AT 2001-907938	20010301
US 2003225111	A1	20031204	US 2002-220140	20020828
PRIORITY APPLN. INFO.:			EP 2000-400595 A	20000306
			WO 2001-GB863 W	20010301

OTHER SOURCE(S): MARPAT 135:227013
GI

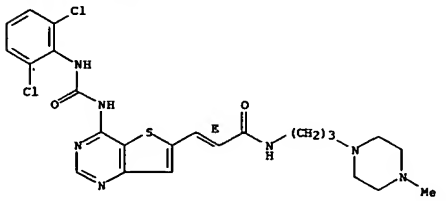


II

AB Q1NR2C(:X)NR3Q2 [I; Q1 = e.g., (un)substituted 4-quinazolinyl; Q2 =

L11 ANSWER 25 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
(un)substituted (hetero)aryl(alkyl), cycloalkyl, etc.; R2,R3 = H or alkyl; R2R3 = (CH2)1-3; X = O, S, NCN, (alkyl)imino] were prepd. Thus, Et piperidine-4-carboxylate was converted in 7 steps to Et 2-amino-5-methoxy-4-(1-methylpiperidine-4-ylmethoxy)benzoate which was cyclocondensed with HC(:NH)NH2.HOAc and the product converted in 4 steps to title compd. II. Data for biol. activity of I were given.
IT 320364-87-2P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of quinazolinylureas and analogs as VEGF receptor antagonists)
RN 320364-87-2 CAPLUS
CN 2-Propenamide, 3-[4-[[[(2,6-dichlorophenyl)amino]carbonyl]amino]thieno[3,2-d]pyrimidin-6-yl]-N-[3-(4-methyl-1-piperazinyl)propyl]-, (2E)- (9CI) (CA INDEX NAME)

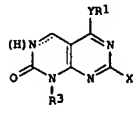
Double bond geometry as shown.



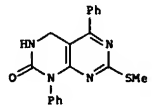
L11 ANSWER 26 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:661424 CAPLUS
DOCUMENT NUMBER: 135:211051
TITLE: Preparation of 1,5-disubstituted-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-ones for treatment of CSBP/p38 kinase mediated diseases
INVENTOR(S): Adams, Jerry L.; Boehm, Jeffrey C.; Hall, Ralph F.; Taggart, John J.
PATENT ASSIGNEE(S): Smithkline Beecham Corp., USA
SOURCE: PCT Int. Appl., 102 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001064679	A1	20010907	WO 2001-US6688	20010302
W: AE, AL, AU, BA, BB, BG, BR, BZ, CA, CN, CO, CZ, DZ, EE, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, MZ, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, TZ, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2402092	AA	20010907	CA 2001-2402092	20010302
EP 1265900	A1	20021218	EP 2001-914625	20010302
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003525295	T2	20030826	JP 2001-564176	20010302
NZ 520914	A	20040326	NZ 2001-520914	20010302
BR 2001008715	A	20040427	BR 2001-8715	20010302
US 2003100756	A1	20030529	US 2002-220103	20020828
NO 2002004134	A	20021024	NO 2002-4134	20020830
ZA 2002007017	A	20040226	ZA 2002-7017	20020902
PRIORITY APPLN. INFO.:			US 2000-186419P P	20000302
			WO 2001-US6688 W	20010302

OTHER SOURCE(S): MARPAT 135:211051
GI



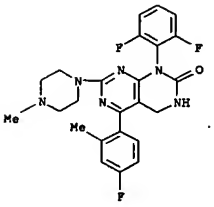
I



II

AB The title compds. (I) [wherein R1 = (un)substituted (hetero)aryl; R2 = H or (un)substituted (cyclo)alkyl(alkyl), (hetero)aryl(alkyl), or heterocyclyl(alkyl); R3 = (un)substituted (cyclo)alkyl(alkyl), (hetero)aryl(alkyl), or heterocyclyl(alkyl); Y = a bond, CRb, CO, NRd, O, or SOm; Rb = H, alkyl, NRc, OH, SH, alkoxy, or SOm-alkyl; Rc and Rd = independently H or alkyl; X = R2, OR2, SOmR2, or (un)substituted

L11 ANSWER 26 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
(CH2)nNH2; m = 0-2; n = 0-10; or pharmaceutically acceptable salts thereof] were prepd. as CSBP/p38 kinase inhibitors. For example, 4,6-dichloro-2-methylsulfanylpyrimidine-5-carbonitrile was condensed with aniline, followed by acylation with PhB(OH)2, redn. of the nitrile using LAH in Et2O, and cyclocondensation of the diamine with COCl2 in toluene and pyridine, to give II. Representative compds. I inhibited CSBP/p38 kinase with IC50 values of < 100 μM. Applications of I to a wide variety of arthritic, inflammatory, proliferative, and viral conditions are specifically claimed.
IT 357933-64-3P 357933-65-4P 357934-07-7P
357934-52-2P 357934-54-4P 357934-60-2P
357934-77-1P 357934-81-7P 357935-55-8P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of 1,5-disubstituted-3,4-dihydro-1H-pyrimido[4,5-d]pyrimidin-2-ones for treatment of CSBP/p38 kinase mediated diseases)
RN 357933-64-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-difluorophenyl)-5-(4-fluoro-2-methylphenyl)-3,4-dihydro-7-(4-methyl-1-piperazinyl)- (9CI) (CA INDEX NAME)

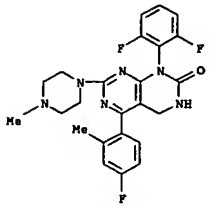


RN 357933-65-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-difluorophenyl)-5-(4-fluoro-2-methylphenyl)-3,4-dihydro-7-(4-methyl-1-piperazinyl)-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 357933-64-3
CMF C24 H23 F3 N6 O

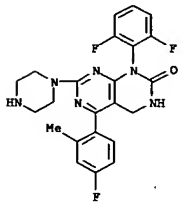
L11 ANSWER 26 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



CM 2

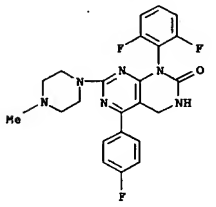
CRN 76-05-1
CMF C2 H F3 O2

RN 357934-07-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-difluorophenyl)-5-(4-fluoro-2-methylphenyl)-3,4-dihydro-7-(1-piperazinyl)- (9CI) (CA INDEX NAME)

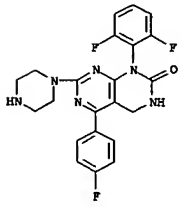


RN 357934-52-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-difluorophenyl)-3,4-dihydro-7-

L11 ANSWER 26 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

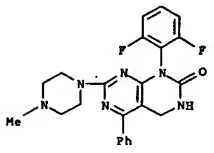


RN 357934-81-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-difluorophenyl)-5-(4-fluorophenyl)-3,4-dihydro-7-(1-piperazinyl)- (9CI) (CA INDEX NAME)

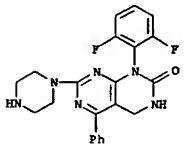


RN 357935-55-8 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-dimethylphenyl)-5-(4-fluoro-2-methylphenyl)-3,4-dihydro-7-(1-piperazinyl)- (9CI) (CA INDEX NAME)

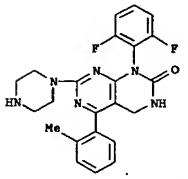
L11 ANSWER 26 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
(4-methyl-1-piperazinyl)-5-phenyl- (9CI) (CA INDEX NAME)



RN 357934-54-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-difluorophenyl)-3,4-dihydro-5-phenyl-7-(1-piperazinyl)- (9CI) (CA INDEX NAME)

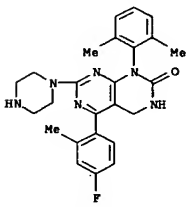


RN 357934-60-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-difluorophenyl)-3,4-dihydro-5-(2-methylphenyl)-7-(1-piperazinyl)- (9CI) (CA INDEX NAME)



RN 357934-77-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(2,6-difluorophenyl)-5-(4-fluorophenyl)-3,4-dihydro-7-(4-methyl-1-piperazinyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 26 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

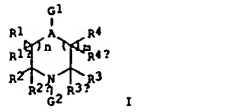
L11 ANSWER 27 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:78383 CAPLUS
DOCUMENT NUMBER: 134:163059
TITLE: Substituted piperazinone derivatives and other oxoazaheterocyclyl compounds useful as factor Xa/IIa inhibitors
INVENTOR(S): Ewing, William R.; Becker, Michael R.; Choi-Sledeski, Yong Mi; Pauls, Heinz W.; He, Wei; Condon, Stephen M.; Davis, Roderick S.; Hanney, Barbara A.; Spada, Alfred P.; Burns, Christopher J.; Jiang, John Z.; Li, Aiwen; Myers, Michael R.; Lau, Wan F.; Poli, Gregory B.
PATENT ASSIGNEE(S): Aventis Pharmaceuticals Products Inc., USA
SOURCE: PCT Int. Appl., 460 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

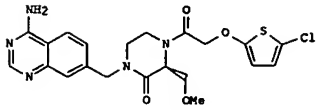
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001007436	A2	20010201	WO 2000-IB1156	20000726
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2382755	AA	20010201	CA 2000-2382755	20000726
BR 2000013179	A	20020402	BR 2000-13179	20000726
EP 1208097	A2	20020529	EP 2000-951781	20000726
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
TR 200200225	T2	20020621	TR 2002-200200225	20000726
JP 2003508353	T2	20030304	JP 2001-512520	20000726
EE 200200045	A	20030616	EE 2002-45	20000726
AU 773227	B2	20040520	AU 2000-64628	20000726
NO 2002000214	A	20020402	NO 2002-214	20020115
BG 106340	A	20021031	BG 2002-106340	20020122
ZA 2002000543	A	20030623	ZA 2002-543	20020122
PRIORITY APPLN. INFO.:			US 1999-363196 A	19990728
			WO 2000-IB1156 W	20000726

OTHER SOURCE(S): MARPAT 134:163059
GI

L11 ANSWER 27 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



I



II

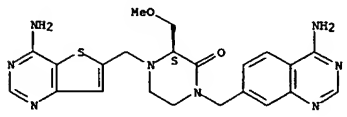
AB The invention is directed to piperazinones I and their pharmaceutically acceptable salts, prodrugs, N-oxides, hydrates, and solvates [wherein A = CH or N; G1 and G2 = L1Cy1 or L2Cy2; Cy1 and Cy2 = (un)substituted aryl, heteroaryl, cycloalkyl, cycloalkenyl, heterocyclyl, etc.; L1 = null, O, S, SO, SO2, or (un)substituted sulfamoyl, methylene, (alkyl)keto(alkyl), carbamoyl, etc.; L2 = null or linking group; R1, R1a, R2, R2a, R3, R3a, R4, R4a = independently H, carboxy, alkoxycarbonyl, alkyl, (hetero)aryl, aralkyl, heteroarylalkyl, etc.; m and n = independently 0-2]. The compds. inhibit factor Xa (no data) and factor IIa, and thereby the production of thrombin, and are thus useful as anticoagulants in the treatment of a wide variety of conditions. The invention is also directed to pharmaceutical compns., synthetic intermediates, and a method of inhibiting factor Xa. Examples include the synthesis of approx. 1600 invention compds. and several hundred intermediates. For instance, condensation of 5-chloro-2-thienyloxyacetic acid with the corresponding N-benzyloxycarbonyl-protected piperazinone derivative (prepns. given), using DIPEA and TBTU in DMF, gave II.

IT 323582-55-4P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(target compound; preparation of piperazinone derivs. and other substituted
. oxoazaheterocyclyl compds. as factor Xa/IIa inhibitors)

RN 323582-55-4 CAPLUS
CN Piperazinone, 1-[(4-amino-7-quinazolinyl)methyl]-4-[(4-aminothieno[3,2-d]pyrimidin-6-yl)methyl]-3-(methoxymethyl)-, (3S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

L11 ANSWER 27 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



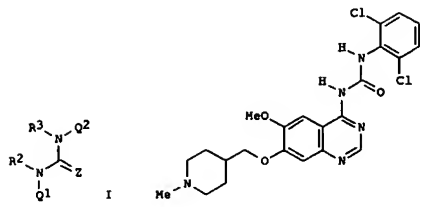
L11 ANSWER 28 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:50631 CAPLUS
DOCUMENT NUMBER: 134:100885
TITLE: Preparation of quinazolinyl ureas, thioureas and guanidines for use in the prevention or treatment of T cell mediated diseases or medical conditions
INVENTOR(S): Crawley, Graham Charles; McKerrecher, Darren; Poyser, Jeffrey Philip; Hennequin, Laurent Francois Andre; Ple, Patrick; Lambert, Christine Marie-Paul
PATENT ASSIGNEE(S): Astrazeneca UK Limited, UK; Zeneca Pharma S.A.
SOURCE: PCT Int. Appl., 169 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001004102	A1	20010118	WO 2000-GB2566	20000704
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2378291	AA	20010118	CA 2000-2378291	20000704
BR 2000012157	A	20020402	BR 2000-12157	20000704
EP 1218353	A1	20020703	EP 2000-953271	20000704
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
JP 2003504360	T2	20030204	JP 2001-509712	20000704
ZA 2001009864	A	20030228	ZA 2001-9864	20011129
NO 2002000042	A	20020304	NO 2002-42	20020104
US 6806274	B1	20041019	US 2002-19945	20020107
PRIORITY APPLN. INFO.:			EP 1999-401692 A	19990707
			EP 2000-401221 A	20000504
			WO 2000-GB2566 W	20000704

OTHER SOURCE(S): MARPAT 134:100885
GI

L11 ANSWER 28 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



I II

AB The title compds. [I; Q1 = quinazoline ring optionally substituted with halo, CF3 or CN, or a group X1Q3 (wherein X1 = a direct bond, O; Q3 = aryl, arylalkyl, heterocyclyl, (heterocyclyl)alkyl); R2, R3 = H, alkyl; Z = O, S, NH; Q2 = aryl, arylalkyl] and their pharmaceutically-acceptable salts, useful in the prevention or treatment of T cell mediated diseases or medical conditions such as transplant rejection or rheumatoid arthritis, were prepared and formulated. E.g., a multi-step synthesis of the urea II was given. In general, activity possessed by compds. I may be demonstrated at IC50 of 0.0001- 5 μM against enzyme p56lck binding and IC50 of 0.001-10 μM in in vitro T cell proliferation assay (T cell receptor stimulation).

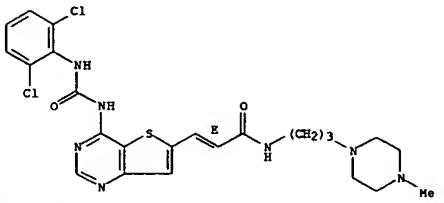
IT **320364-87-2P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of quinazolinyl ureas, thioureas and guanidines for use in the prevention or treatment of T cell mediated diseases or medical conditions)

RN 320364-87-2 CAPLUS

CN 2-Propenamide, 3-[4-[[[(2,6-dichlorophenyl)amino]carbonyl]amino]thieno[3,2-d]pyrimidin-6-yl]-N-[3-(4-methyl-1-piperazinyl)propyl]-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

L11 ANSWER 28 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



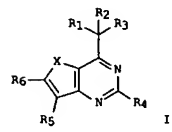
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 29 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:31510 CAPLUS
DOCUMENT NUMBER: 134:100882
TITLE: Thieno- and furopyrimidine derivatives as a2a-receptor antagonists
INVENTOR(S): Gillespie, Roger John; Giles, Paul Richard; Lerpiniere, Joanne; Dawson, Claire Elizabeth; Bebbington, David
PATENT ASSIGNEE(S): Vernalis Research Limited, UK
SOURCE: PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001002409	A1	20010111	WO 2000-GB2517	20000630
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2370344	AA	20010111	CA 2000-2370344	20000630
EP 1192164	A1	20020403	EP 2000-940670	20000630
EP 1192164	B1	20050817		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, IE, SI, LT, LV, FI, RO				
AT 302205	E	20050915	AT 2000-940670	20000630
US 6787541	B1	20040907	US 2002-958948	20020313
PRIORITY APPLN. INFO.:			GB 1999-15437 A	19990701
			WO 2000-GB2517 W	20000630

OTHER SOURCE(S): MARPAT 134:100882
GI



I

AB Thieno- and furopyrimidines I [X = O or S; R1 and R2 are independently selected from hydrogen, alkyl, aryl, hydroxy, alkoxy, aryloxy, cyano, nitro, CO2R7, COR7, OCOR7CONR7R8, CONR7NR8R9, OCONR7R8, NR7R8, NR7COR8, NR7CONR8R9, NR7CO2R8, NR7SO2R8, NR7CONR8NR9R10, NR7NR8CO2R9, NR7NR8CONR9R10, NR7SO2NR8R9, SO2R7, SOR7, SR7 and SO2NR7R8, or R1 and R2 together form a carbonyl group (C=O), an oxime group (C=NOR11), an imine group (C=NR11) or a hydrazone group (C=NNR11R12), or R1 and R2 together form a 5, 6 or 7 membered carbocyclic or heterocyclic ring; R3 is alkyl or

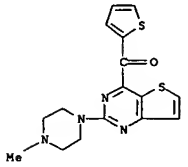
L11 ANSWER 29 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

aryl; R4, R5 and R6 are independently selected from hydrogen, alkyl, aryl, halogen, hydroxy, nitro, cyano, alkoxy, aryloxy, COR7, OCOR7, CO2R7, SR7, SOR7, SO2R7, SO2NR7R8, CONR7R8, CONR7NR8R9, OCONR7R8, NR7R8, NR7COR8, NR7CONR8R9, NR7CO2R8, NR7SO2R8, CR7=NOR8, NR7CONR8NR9R10, NR7NR8CO2R9, NR7NR8CONR9R10, SO2NR7NR8R9, NR7SO2NR8R9, NR7NR8SO2R9, NR7NR8COR9, NR7NR8R9 and NR7CSNR8R9, or R5 and R6 together form a 5, 6 or 7 membered carbocyclic or heterocyclic ring; R7, R8, R9, R10, R11 and R12 are independently selected from hydrogen, alkyl and aryl] or a pharmaceutically acceptable salt thereof or prodrug thereof, are prepd. as antagonists of purine receptors, and the use thereof in therapy, particularly in the therapy of a disorder in which the blocking of purine receptors may be beneficial, such as Parkinson's Disease and other movement disorders. In particular, I are tested for their activity as antagonists of the adenosine A2a receptor. E.g., thienopyridine I (X = S; R1 = R2 = O; R3 = Ph; R4 = F3C; R5 = R6 = H) (II) was prepd. by treatment of a soln. of 4-chloro-2-(trifluoromethyl)thieno[3,2-d]pyrimidine, benzaldehyde, and N,N-dimethylimidazolium iodide in THF with sodium hydride; the soln. was then refluxed for 15 min. and cooled to room temp. to give, after workup, II in 43% yield. Biol. data on the binding of a subset of I to the adenosine A2a receptor was obtained.

IT **319441-27-5P 319441-28-6P 319441-31-1P**
319441-36-6P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of thieno[3,2-d]pyrimidine and furo[3,2-d]pyrimidine derivs. as adenosine A2a receptor antagonists for the treatment of movement disorders such as Parkinson's disease)

RN 319441-27-5 CAPLUS

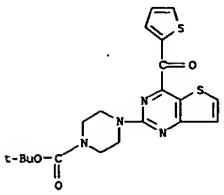
CN Methanone, [2-(4-methyl-1-piperazinyl)thieno[3,2-d]pyrimidin-4-yl]-2-thienyl- (9CI) (CA INDEX NAME)



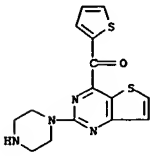
RN 319441-28-6 CAPLUS

CN 1-Piperazinecarboxylic acid, 4-[4-(2-thienylcarbonyl)thieno[3,2-d]pyrimidin-2-yl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

L11 ANSWER 29 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

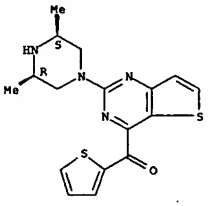


RN 319441-31-1 CAPLUS
CN Methanone, [2-(1-piperazinyl)thieno[3,2-d]pyrimidin-4-yl]-2-thienyl- (9CI) (CA INDEX NAME)



RN 319441-36-6 CAPLUS
CN Methanone, [2-[(3R,5S)-3,5-dimethyl-1-piperazinyl]thieno[3,2-d]pyrimidin-4-yl]-2-thienyl-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L11 ANSWER 29 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

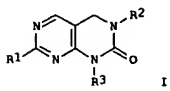
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 30 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:291041 CAPLUS
DOCUMENT NUMBER: 132:308352
TITLE: Preparation of pyrimidopyrimidinones as T-cell tyrosine kinase inhibitors
INVENTOR(S): Harris, William; Hill, Christopher Huw; Smith, Ian Edward David
PATENT ASSIGNEE(S): F. Hoffmann-La Roche A.-G., Switz.
SOURCE: PCT Int. Appl., 109 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000024744	A1	20000504	WO 1999-EP7675	19991013
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2347474	AA	20000504	CA 1999-2347474	19991013
BR 9914677	A	20010717	BR 1999-14677	19991013
EP 1123295	A1	20010816	EP 1999-953796	19991013
EP 1123295	B1	20040929		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
TR 200101102	T2	20020121	TR 2001-200101102	19991013
JP 2002528455	T2	20020903	JP 2000-578314	19991013
JP 3593035	B2	20041124		
NZ 510760	A	20030829	NZ 1999-510760	19991013
AU 769989	B2	20040212	AU 2000-10363	19991013
AT 277931	E	20041015	AT 1999-953796	19991013
PT 1123295	T	20050131	PT 1999-953796	19991013
ES 2228123	T3	20050401	ES 1999-953796	19991013
RU 2256662	C2	20050720	RU 2001-113444	19991013
US 6150373	A	20001121	US 1999-422451	19991021
ZA 2001002652	A	20020930	ZA 2001-2652	20010330
HR 2001000274	A1	20020630	HR 2001-274	20010412
NO 2001001929	A	20010419	NO 2001-1929	20010419
HK 1041483	A1	20041224	HK 2002-103084	20020424
PRIORITY APPLN. INFO.:			GB 1998-23277 A	19981023
			GB 1999-20044 A	19990824
			WO 1999-EP7675 W	19991013

OTHER SOURCE(S): MARPAT 132:308352
GI



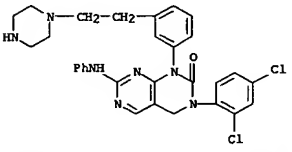
I

L11 ANSWER 30 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

AB Title compds. [I; R1 = NH2, alkylamino, (hetero)aryl(alkyl)amino; R2 = alkyl (hetero)aryl(alkyl); R3 = H, alkyl, (hetero)aryl(alkyl), cycloalkenyl] were prepared Thus, Et 4-chloro-2-methylthiopyrimidine-5-carboxylate was aminated by MeNH2 and the product converted to the aldehyde which was condensed with 2,6-Cl2C6H3NH2 to give 2,6-Cl2C6H3NHCH2ZNHMe (Z = 2-methylthiopyrimidine-5,4-diyl). The latter was cyclocondensed with COCl2 and the the product oxidized to give I (R2 = 2,6-Cl2C6H3NHCH2, R3 = Me)(II; R1 = SO2Me) which was aminated by 4-(H2N)C6H4OCH2CH2NEt2 (preparation given) to give II [R1 = 4-(Et2NCH2CH2O)C6H4NH]. Data for biol. activity of I were given.

IT **266313-77-3P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pyrimidopyrimidinones as T-cell tyrosine kinase inhibitors)

RN 266313-77-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3-(2,4-dichlorophenyl)-3,4-dihydro-7-(phenylamino)-1-[3-[2-(1-piperazinyl)ethyl]phenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:764041 CAPLUS
DOCUMENT NUMBER: 132:22971
TITLE: Preparation of oxopyrido- and -pyrimidopyrimidines as cellular proliferation inhibitors
INVENTOR(S): Dobrusin, Ellen Myra; Hamby, James Marino; Kramer, James Bernard; Schroeder, Mel Conrad; Showalter, Howard Daniel Hollis; Toogood, Peter; Trumpp-Kallmeyer, Susanne A.
PATENT ASSIGNEE(S): Warner-Lambert Co., USA
SOURCE: PCT Int. Appl., 133 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9961444	A2	19991202	WO 1999-US10187	19990510
WO 9961444	A3	20000203		
W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
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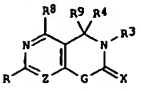
AU 9940734	A1	19991213	AU 1999-40734	19990510
AU 763839	B2	20030731		
BR 9911590	A	20010213	BR 1999-11590	19990510
EP 1080092	A2	20010307	EP 1999-924165	19990510
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
TR 200003429	T2	20010723	TR 2000-200003429	19990510
JP 2002516327	T2	20020604	JP 2000-550849	19990510
EE 200000706	A	20020617	EE 2000-706	19990510
NZ 508268	A	20040227	NZ 1999-508268	19990510
ZA 2000006536	A	20020211	ZA 2000-6536	20001110
BG 104960	A	20011031	BG 2000-104960	20001117
HR 2000000799	A1	20010630	HR 2000-799	20001120
NO 2000005928	A	20001123	NO 2000-5928	20001123
HK 1039483	A1	20040618	HK 2001-107828	20011108
US 2004044012	A1	20040304	US 2003-638848	20030811

PRIORITY APPLN. INFO.:

US 1998-86708P	P	19980526
US 1999-126158P	P	19990325
WO 1999-US10187	W	19990510
US 2000-623737	A3	20000907

OTHER SOURCE(S): MARPAT 132:22971
GI

L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

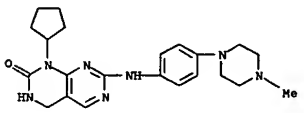


I

AB Title compds. [I; G = NR2 or CHR2; R = NHR1 or SO0-2R1; R1,R2 = H, (cyclo)alkyl, (un)substituted PH, -pyridyl, etc.; R3 = groups cited for R1, OH, alkoxy(carbonyl), etc.; R4 = H; R3R4 = bond; R8,R9 = H, halo, NH2, alkoxycarbonyl, etc.; X = O, S, (alkyl)imino, etc.; Z =N or CH] were prepared as cyclin-dependant and tyrosine kinase inhibitors. Thus, 5-aminomethyl-4-cyclopentylamino-2-methylthiopyrimidine (preparation given) was cyclocondensed with 1,1'-carbonyldiimidazole and the oxidized product aminated by 4-(MeO)C6H4NH2 to give I [G = cyclopentylimino, R = 4-(MeO)C6H4NH, R3 = R4 = R8 = R9 = H, X = O]. Data for biol. activity of I were given.

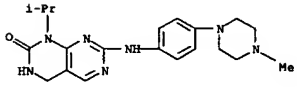
IT 251371-33-2P 251371-44-5P 251371-51-4P
251371-52-5P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of bicyclic pyrimidines and bicyclic 3,4-dihydropyrimidines as inhibitors of cellular proliferation)

RN 251371-33-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-cyclopentyl-3,4-dihydro-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)



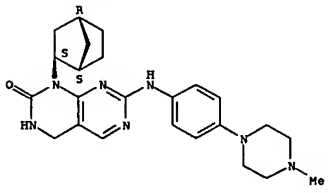
RN 251371-44-5 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3,4-dihydro-1-(1-methylethyl)-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)

L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 251371-51-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(1R,2R,4S)-bicyclo[2.2.1]hept-2-yl-3,4-dihydro-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]-, rel- (9CI) (CA INDEX NAME)

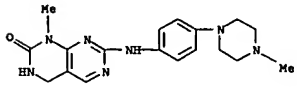
Relative stereochemistry.



RN 251371-52-5 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3,4-dihydro-1-methyl-1-[[4-(4-methyl-1-piperazinyl)phenyl]amino]-, bis(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 251369-95-6
CMF C18 H23 N7 O



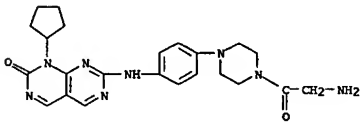
CM 2

CRN 76-05-1
CMF C2 H F3 O2

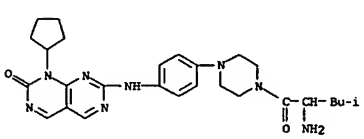
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

IT 251369-82-1P 251369-83-2P 251369-90-1P
251369-92-3P 251369-95-6P 251370-01-1P
251370-02-2P 251370-10-2P 251370-11-3P
251370-13-5P 251370-14-6P 251370-15-7P
251370-16-8P 251370-17-9P 251370-51-1P
251370-56-6P 251370-57-7P 251370-59-9P
251370-60-2P 251370-64-6P 251371-40-1P
251371-57-0P 251371-65-0P 251371-70-7P
251371-73-0P 251371-85-4P 251371-86-5P
251371-87-6P 251371-90-1P 251371-91-2P
251371-92-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of bicyclic pyrimidines and bicyclic 3,4-dihydropyrimidines as inhibitors of cellular proliferation)

RN 251369-82-1 CAPLUS
CN Piperazine, 1-(aminoacetyl)-4-[4-[(8-cyclopentyl-7,8-dihydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl)amino]phenyl]- (9CI) (CA INDEX NAME)

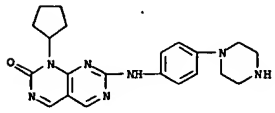


RN 251369-83-2 CAPLUS
CN Piperazine, 1-(2-amino-4-methyl-1-oxopentyl)-4-[4-[(8-cyclopentyl-7,8-dihydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl)amino]phenyl]- (9CI) (CA INDEX NAME)

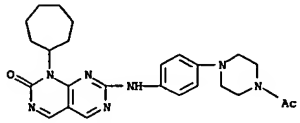


RN 251369-90-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-cyclopentyl-7-[[4-(1-

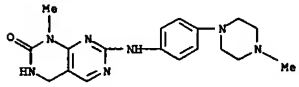
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)



RN 251369-92-3 CAPLUS
CN Piperazine, 1-acetyl-4-[4-[(8-cycloheptyl-7,8-dihydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl)amino]phenyl]- (9CI) (CA INDEX NAME)

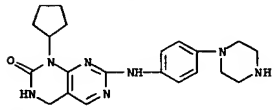


RN 251369-95-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3,4-dihydro-1-methyl-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)

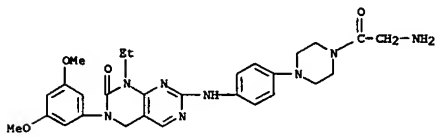


RN 251370-01-1 CAPLUS
CN Piperazine, 1-(aminoacetyl)-4-[4-[(8-cyclopentyl-5,6,7,8-tetrahydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl)amino]phenyl]- (9CI) (CA INDEX NAME)

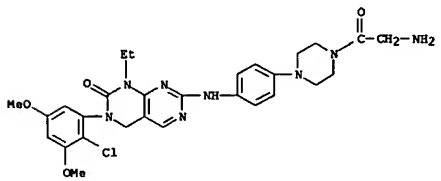
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 251370-13-5 CAPLUS
CN Piperazine, 1-(aminoacetyl)-4-[4-[[6-(3,5-dimethoxyphenyl)-8-ethyl-5,6,7,8-tetrahydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl]amino]phenyl]- (9CI) (CA INDEX NAME)

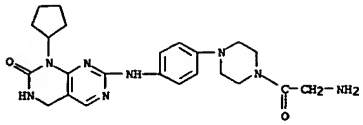


RN 251370-14-6 CAPLUS
CN Piperazine, 1-(aminoacetyl)-4-[4-[[6-(2-chloro-3,5-dimethoxyphenyl)-8-ethyl-5,6,7,8-tetrahydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl]amino]phenyl]- (9CI) (CA INDEX NAME)

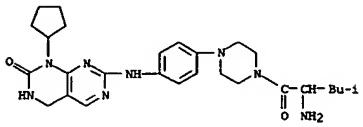


RN 251370-15-7 CAPLUS
CN Piperazine, 1-(aminoacetyl)-4-[4-[[6-(2,6-dichloro-3,5-dimethoxyphenyl)-8-ethyl-5,6,7,8-tetrahydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl]amino]phenyl]- (9CI) (CA INDEX NAME)

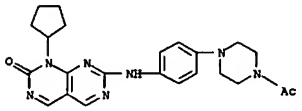
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 251370-02-2 CAPLUS
CN Piperazine, 1-(2-amino-4-methyl-1-oxopentyl)-4-[4-[(8-cyclopentyl-5,6,7,8-tetrahydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl)amino]phenyl]- (9CI) (CA INDEX NAME)

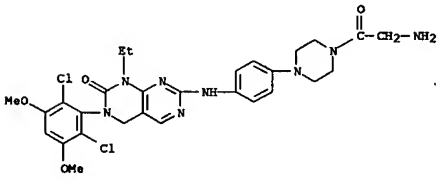


RN 251370-10-2 CAPLUS
CN Piperazine, 1-acetyl-4-[4-[(8-cyclopentyl-7,8-dihydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl)amino]phenyl]- (9CI) (CA INDEX NAME)

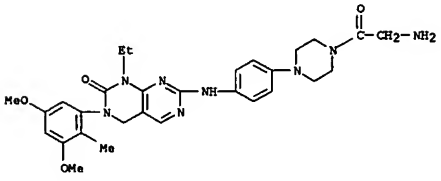


RN 251370-11-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-cyclopentyl-3,4-dihydro-7-[[4-(1-piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)

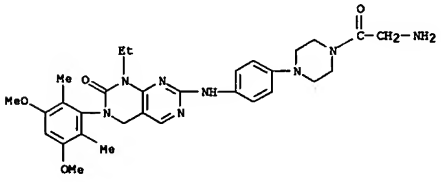
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 251370-16-8 CAPLUS
CN Piperazine, 1-(aminoacetyl)-4-[4-[[6-(3,5-dimethoxy-2-methylphenyl)-8-ethyl-5,6,7,8-tetrahydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl]amino]phenyl]- (9CI) (CA INDEX NAME)

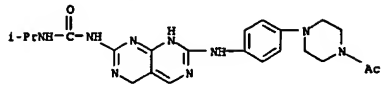


RN 251370-17-9 CAPLUS
CN Piperazine, 1-(aminoacetyl)-4-[4-[[6-(3,5-dimethoxy-2,6-dimethylphenyl)-8-ethyl-5,6,7,8-tetrahydro-7-oxopyrimido[4,5-d]pyrimidin-2-yl]amino]phenyl]- (9CI) (CA INDEX NAME)

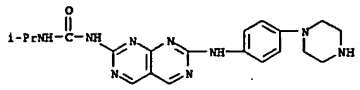


RN 251370-51-1 CAPLUS
CN Piperazine, 1-acetyl-4-[4-[[1,5-dihydro-7-[[[(1-methylethyl)amino]carbonyl]amino]pyrimido[4,5-d]pyrimidin-2-yl]amino]phenyl]- (9CI) (CA INDEX NAME)

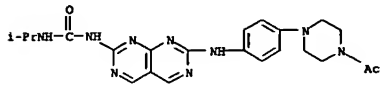
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



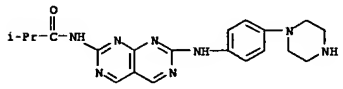
RN 251370-56-6 CAPLUS
CN Urea, N-(1-methylethyl)-N'-[7-[[4-(1-piperazinyl)phenyl]amino]pyrimido[4,5-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)



RN 251370-57-7 CAPLUS
CN Piperazine, 1-acetyl-4-[4-[[7-[[[(1-methylethyl)amino]carbonyl]amino]pyrimido[4,5-d]pyrimidin-2-yl]amino]phenyl]- (9CI) (CA INDEX NAME)

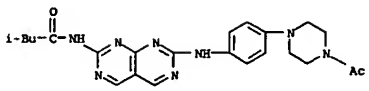


RN 251370-59-9 CAPLUS
CN Propanamide, 2-methyl-N-[7-[[4-(1-piperazinyl)phenyl]amino]pyrimido[4,5-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)

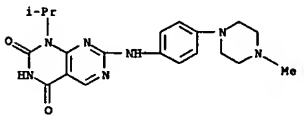


RN 251370-60-2 CAPLUS
CN Butanamide, N-[7-[[4-(4-acetyl-1-piperazinyl)phenyl]amino]pyrimido[4,5-d]pyrimidin-2-yl]-3-methyl- (9CI) (CA INDEX NAME)

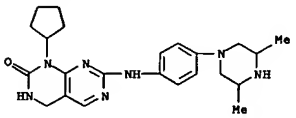
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



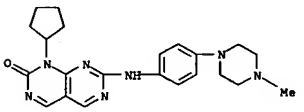
RN 251370-64-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 1-(1-methylethyl)-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)



RN 251371-40-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-cyclopentyl-7-[[4-(3,5-dimethyl-1-piperazinyl)phenyl]amino]-3,4-dihydro- (9CI) (CA INDEX NAME)

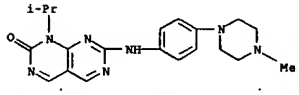


RN 251371-57-0 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-cyclopentyl-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)



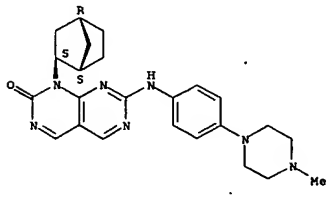
RN 251371-65-0 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(1-methylethyl)-7-[[4-(4-methyl-1-

L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)

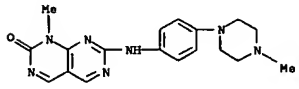


RN 251371-70-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-(1R,2R,4S)-bicyclo[2.2.1]hept-2-yl-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]-, rel- (9CI) (CA INDEX NAME)

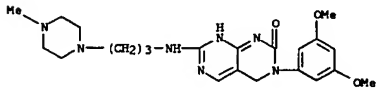
Relative stereochemistry.



RN 251371-73-0 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 1-methyl-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)

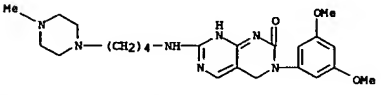


RN 251371-85-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3-(3,5-dimethoxyphenyl)-3,4-dihydro-7-[[3-(4-methyl-1-piperazinyl)propyl]amino]- (9CI) (CA INDEX NAME)

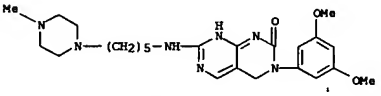


RN 251371-86-5 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3-(3,5-dimethoxyphenyl)-3,4-dihydro-7-

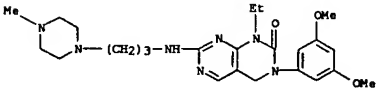
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
[[4-(4-methyl-1-piperazinyl)butyl]amino]- (9CI) (CA INDEX NAME)



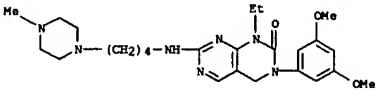
RN 251371-87-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3-(3,5-dimethoxyphenyl)-3,4-dihydro-7-[[5-(4-methyl-1-piperazinyl)pentyl]amino]- (9CI) (CA INDEX NAME)



RN 251371-90-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3-(3,5-dimethoxyphenyl)-1-ethyl-3,4-dihydro-7-[[3-(4-methyl-1-piperazinyl)propyl]amino]- (9CI) (CA INDEX NAME)

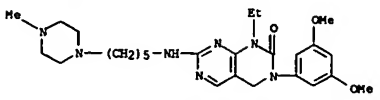


RN 251371-91-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3-(3,5-dimethoxyphenyl)-1-ethyl-3,4-dihydro-7-[[4-(4-methyl-1-piperazinyl)butyl]amino]- (9CI) (CA INDEX NAME)

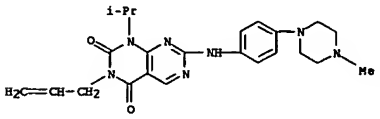


RN 251371-92-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-2(1H)-one, 3-(3,5-dimethoxyphenyl)-1-ethyl-3,4-dihydro-7-[[5-(4-methyl-1-piperazinyl)pentyl]amino]- (9CI) (CA INDEX NAME)

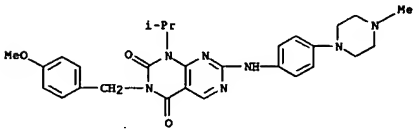
L11 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



IT 251372-02-8P 251372-03-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of bicyclic pyrimidines and bicyclic 3,4-dihydropyrimidines as
inhibitors of cellular proliferation)
RN 251372-02-8 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 1-(1-methylethyl)-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]-3-(2-propenyl)- (9CI) (CA INDEX NAME)



RN 251372-03-9 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[(4-methoxyphenyl)methyl]-1-(1-methylethyl)-7-[[4-(4-methyl-1-piperazinyl)phenyl]amino]- (9CI) (CA INDEX NAME)

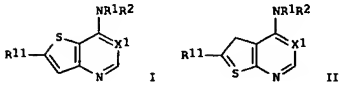


L11 ANSWER 32 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:325942 CAPLUS
DOCUMENT NUMBER: 131:5266
TITLE: Preparation of thienopyrimidines and thienopyridines as anticancer agents
INVENTOR(S): Munchhof, Michael John; Sobolov-Jaynes, Susan Beth
PATENT ASSIGNEE(S): Pfizer Products Inc., USA
SOURCE: PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

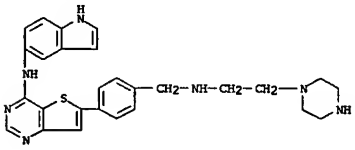
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9924440	A1	19990520	WO 1998-IB1691	19981022
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2309690	AA	19990520	CA 1998-2309690	19981022
AU 9894541	A1	19990531	AU 1998-94541	19981022
EP 1028964	A1	20000823	EP 1998-947716	19981022
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, SI, LT, LV, FI, RO				
BR 9814018	A	20000926	BR 1998-14018	19981022
JP 2001522853	T2	20011120	JP 2000-520449	19981022
NZ 520093	A	20040326	NZ 1998-520093	19981022
AP 976	A	20010612	AP 1998-1389	19981105
W: BW, GM, GH, KE, MW, SD, UG, ZM, ZW				
TW 593321	B	20040621	TW 1998-87118534	19981106
ZA 9810253	A	20000510	ZA 1998-10253	19981110
US 6492383	B1	20021210	US 2000-502129	20000210
NO 2000002162	A	20000710	NO 2000-2162	20000427
BG 104412	A	20010228	BG 2000-104412	20000509
HR 2000000286	A1	20001231	HR 2000-286	20000510
US 2003162795	A1	20030828	US 2002-244324	20020916
PRIORITY APPLN. INFO.:			US 1997-65097P	P 19971111
			NZ 1998-503913	A1 19981022
			WO 1998-IB1691	W 19981022
			US 2000-502129	A1 20000210
			US 2001-65097P	P 20011111

OTHER SOURCE(S): MARPAT 131:5266
GI

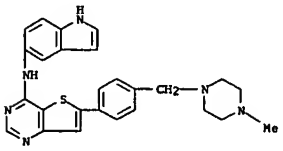
L11 ANSWER 32 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



AB The title compds. [I and II; X1 = N, CH; R1 = H, alkyl, C(O)alkyl; R2 = (un)substituted C6-10 aryl, 5-13 membered heterocyclic; R11 = H, alkyl, C(O)NR6R9, etc.; R6 = H, alkyl, etc.; R9 = H, alkyl, etc.] and their pharmaceutically acceptable salts, useful for treating hyperproliferative disorders, were prepared E.g., a multi-step synthesis of I [X1 = N; R1 = indol-5-yl; R2 = H; R11 = Br], was given. Compds. I are effective at 0.2-2.5 g/day for a 70 kg human.
IT 225381-19-1P 225381-25-9P 225381-26-0P
225381-46-4P 225381-53-3P 225382-34-3P
225383-18-6P 225383-54-0P 225383-78-8P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of thienopyrimidines and thienopyridines as anticancer agents)
RN 225381-19-1 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indol-5-yl-6-[4-[[[2-(1-piperazinyl)ethyl]amino]methyl]phenyl]- (9CI) (CA INDEX NAME)



RN 225381-25-9 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indol-5-yl-6-[4-[(4-methyl-1-piperazinyl)methyl]phenyl]- (9CI) (CA INDEX NAME)

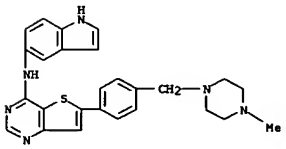


RN 225381-26-0 CAPLUS

L11 ANSWER 32 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indol-5-yl-6-[4-[(4-methyl-1-piperazinyl)methyl]phenyl]-, monomethanesulfonate (9CI) (CA INDEX NAME)

CM 1

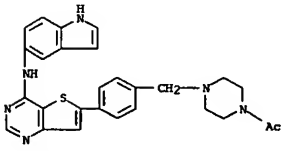
CRN 225381-25-9
CMF C26 H26 N6 S



CM 2

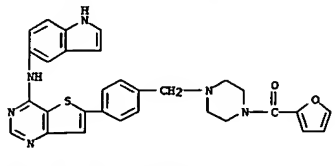
CRN 75-75-2
CMF C H4 O3 S

RN 225381-46-4 CAPLUS
CN Piperazine, 1-acetyl-4-[[4-[4-(1H-indol-5-ylamino)thieno[3,2-d]pyrimidin-6-yl]phenyl]methyl]- (9CI) (CA INDEX NAME)

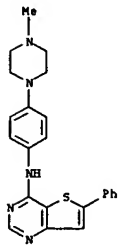


RN 225381-53-3 CAPLUS
CN Piperazine, 1-(2-furanylcarbonyl)-4-[[4-[4-(1H-indol-5-ylamino)thieno[3,2-d]pyrimidin-6-yl]phenyl]methyl]- (9CI) (CA INDEX NAME)

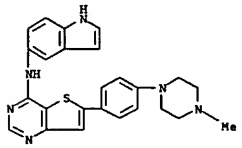
L11 ANSWER 32 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 225382-34-3 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-[4-(4-methyl-1-piperazinyl)phenyl]-6-phenyl- (9CI) (CA INDEX NAME)

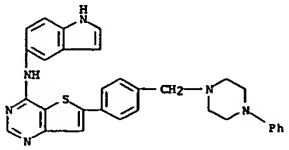


RN 225383-18-6 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indol-5-yl-6-[4-(4-methyl-1-piperazinyl)phenyl]- (9CI) (CA INDEX NAME)

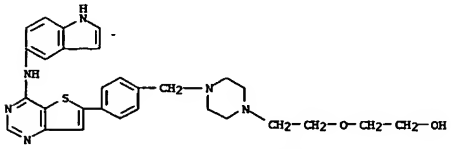


RN 225383-54-0 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-1H-indol-5-yl-6-[4-[(4-phenyl-1-

L11 ANSWER 32 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
piperazinyl)methyl]phenyl]- (9CI) (CA INDEX NAME)

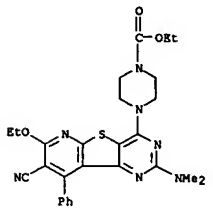


RN 225383-78-8 CAPLUS
CN Ethanol, 2-[2-[4-[[4-[4-(1H-indol-5-ylamino)thieno[3,2-d]pyrimidin-6-yl]phenyl]methyl]-1-piperazinyl]ethoxy]- (9CI) (CA INDEX NAME)

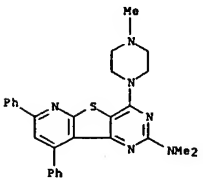


REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

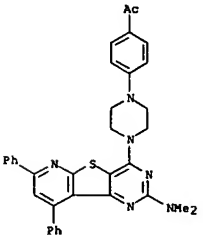
L11 ANSWER 33 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:737279 CAPLUS
DOCUMENT NUMBER: 130:66466
TITLE: Synthesis and antiallergic activity of pyridothienopyrimidines
AUTHOR(S): Quintela, Jose M.; Peinador, Carlos; Veiga, Carmen; Gonzalez, Liliane; Botana, Luis M.; Alfonso, Amparo; Riguera, Ricardo
CORPORATE SOURCE: Departamento de Quimica Fundamental e Industrial, Facultad de Ciencias, Universidad de La Coruna, La Couruna, 15071, Spain
SOURCE: Bioorganic & Medicinal Chemistry (1998), 6(10), 1911-1925
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The synthesis of a series of pyridothienopyrimidines and their evaluation as inhibitors or inducers of the release of histamine from rat mast cells is reported. The activity was measured after immunol. stimulation with ovalbumin and chemical stimulation with polymer 48/80 and the drugs adriamycin and vinorelbine. The expts. were carried out with and without preincubation of the stimulus with the cells before addition of the drug. Several pyridothienopyrimidines show inhibitory IC50 values in the range 2-25 μM, indicating they are up to 100 times more potent than cromoglycate (DSCG) and 10 times greater than Ketotifen. 4-(4-Acetylphenyl)piperazino-7,9-diphenylpyrido[3',2':4,5]thieno[3,2-d]pyrimidine is a potent inhibitor in all the conditions tested and shows IC50=9-25μM. 2-Dimethylamino-4-piperazino-7,9-diphenylpyrido[3',2':4,5]thieno[3,2-d]pyrimidine is cytotoxic in vitro (IC50 = 0.1-0.2μg/mL) against P-388, A-549, HT-29, and MEL-28 tumor cell lines.
IT **217954-80-8P 217954-96-6P 217955-00-5P 217955-04-9P 217955-62-9P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(synthesis and antiallergic activity of pyridothienopyrimidines)
RN 217954-80-8 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[8-cyano-2-(dimethylamino)-7-ethoxy-9-phenylpyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)



L11 ANSWER 33 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 217954-96-6 CAPLUS
CN Pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-2-amine, N,N-dimethyl-4-(4-methyl-1-piperazinyl)-7,9-diphenyl- (9CI) (CA INDEX NAME)

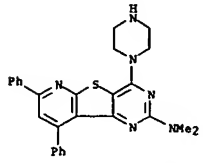


RN 217955-00-5 CAPLUS
CN Ethanone, 1-[4-[4-[2-(dimethylamino)-7,9-diphenylpyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4-yl]-1-piperazinyl]phenyl]- (9CI) (CA INDEX NAME)

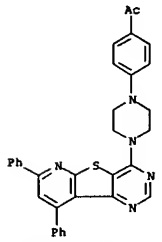


RN 217955-04-9 CAPLUS
CN Pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-2-amine, N,N-dimethyl-7,9-diphenyl-4-(1-piperazinyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 33 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 217955-62-9 CAPLUS
CN Ethanone, 1-[4-[4-(7,9-diphenylpyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4-yl)-1-piperazinyl]phenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 34 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

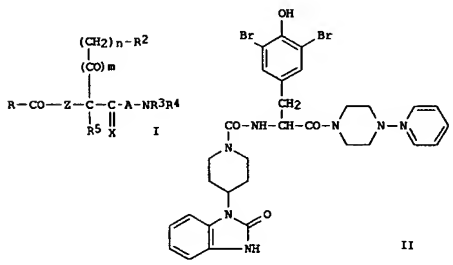
ACCESSION NUMBER: 1998:197358 CAPLUS
DOCUMENT NUMBER: 128:257695
TITLE: Preparation of modified amino acids and their use as calcitonin gene-related peptide antagonists in pharmaceutical compositions
INVENTOR(S): Rudolf, Klaus; Eberlein, Wolfgang; Engel, Wolfhard; Pieper, Helmut; Doods, Henri; Hallermayer, Gerhard; Entzeroth, Michael; Wienen, Wolfgang
PATENT ASSIGNEE(S): Karl Thomae G.m.b.H., Germany
SOURCE: PCT Int. Appl., 461 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9811128	A1	19980319	WO 1997-EP4862	19970908
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
DE 19636623	A1	19980312	DE 1996-19636623	19960910
DE 19720011	A1	19981119	DE 1997-19720011	19970514
CA 2262818	AA	19980319	CA 1997-2262818	19970908
AU 9741196	A1	19980402	AU 1997-41196	19970908
AU 721035	B2	20000622		
EP 927192	A1	19990707	EP 1997-938928	19970908
EP 927192	B1	20040512		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 9712023	A	19990831	BR 1997-12023	19970908
JP 2000505100	T2	20000425	JP 1998-513227	19970908
JP 3483893	B2	20040106		
AT 266673	E	20040515	AT 1997-938928	19970908
EE 4375	B1	20041015	EE 1999-115	19970908
NO 9901130	A	19990505	NO 1999-1130	19990309
KR 2000044040	A	20000715	KR 1999-702008	19990310
BG 64214	B1	20040531	BG 1999-103250	19990315
US 6344449	B1	20020205	US 1999-254281	19991012
HK 1021192	A1	20040430	HK 1999-105722	19991208
US 2001036946	A1	20011101	US 2001-789391	20010221
US 2003069231	A1	20030410	US 2002-119875	20020410
US 2004214819	A1	20041028	US 2004-835495	20040429

PRIORITY APPLN. INFO.:
DE 1996-19636623 A 19960910
DE 1997-19720011 A 19970514
WO 1997-EP4862 W 19970908
US 1999-254281 A1 19991012
US 2001-789391 A1 20010221
US 2002-119875 B1 20020410

OTHER SOURCE(S): MARPAT 128:257695

L11 ANSWER 34 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
GI



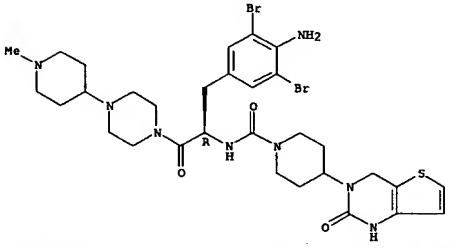
AB The invention concerns modified amino acids of general formula I [A = bond, CX; Z = CH2, NR1; R1 = H, alkyl, phenyl-alkyl; X = O, H,H; n = 1-2; m = 0-1; R = (substituted)alkyl; R2 = Ph, (substituted)(hetero)(bi)cycle; R3 = H, (substituted)alkyl, Ph, pyridinyl; R4 = H, (substituted)alkyl; R3R4= (hetero)cycle; R5 = H, alkyl, alkoxycarbonyl, PhCH2], pharmaceuticals containing these compds., their use and the method for their production, as well as their use for the production and purification of antibodies and as marked compds. in RIA and ELISA assays and as diagnostic or analytic auxiliary agents in neurotransmitter research. Thus, 3,5-dibromo-N2-[4-(1,3-dihydro-2(2H)-oxo-benzimidazol-1-yl)-1-piperidinyl]carbonyl-D-tyrosine was reacted with 1-(4-pyridinyl)-piperazine, to give II(22%). Title compds. show human calcitonin gene related peptide (CGRP) antagonist activity; in in-vitro binding studies with Sk-N-MC-cells, I had IC50 ≤10000 nM, and in the same system, had CGRP-antagonist activity at doses from 10-11 to 10-6 M.

IT 205063-72-5P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of amino acids and their use as calcitonin gene-related peptide antagonists in pharmaceutical compns.)

RN 205063-72-5 CAPLUS
CN 1-Piperidinecarboxamide, N-[1-[(4-amino-3,5-dibromophenyl)methyl]-2-[4-(1-methyl-4-piperidinyl)-1-piperazinyl]-2-oxoethyl]-4-(1,4-dihydro-2-oxothieno[3,2-d]pyrimidin-3(2H)-yl)-, (R)- (9CI) (CA INDEX NAME)

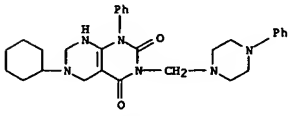
Absolute stereochemistry.

L11 ANSWER 34 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



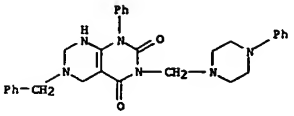
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 35 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:750122 CAPLUS
DOCUMENT NUMBER: 126:59930
TITLE: Synthesis, chemical and pharmacological properties of some 2,4-dioxo-1,2,3,4,5,6,7,8-octahydropyrimido[4,5-d]pyrimidines
AUTHOR(S): Sladowska, Helena; Sieklucka-Dziuba, Maria; Rajtar, Grazyna; Wydro, Roman; Kleinrok, Zdzislaw
CORPORATE SOURCE: Department Chemistry Drugs, Wroclaw University Medicine, Wroclaw, 50-137, Pol.
SOURCE: Acta Poloniae Pharmaceutica (1996), 53(1), 39-46
CODEN: APPHAX; ISSN: 0001-6837
PUBLISHER: Polish Pharmaceutical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Synthesis of 6-substituted 2,4-dioxo-1,2,3,4,5,6,7,8-octahydropyrimido[4,5-d]pyrimidines (I) obtained by cyclocondensation of 1-phenyl-6-aminouracil with formalin and primary amines is described. Compds. I in the Mannich reaction with secondary cyclic amines yield the corresponding 3-substituted N-aminomethyl derivs. Some of them were active pharmacol.
IT 185111-97-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 185111-97-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 6-cyclohexyl-5,6,7,8-tetrahydro-1-phenyl-3-[(4-phenyl-1-piperazinyl)methyl]- (9CI) (CA INDEX NAME)



IT 185111-99-3P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation of pharmacol. active dioxooctahydropyrimido[4,5-d]pyrimidines)
RN 185111-99-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 5,6,7,8-tetrahydro-1-phenyl-6-(phenylmethyl)-3-[(4-phenyl-1-piperazinyl)methyl]- (9CI) (CA INDEX NAME)

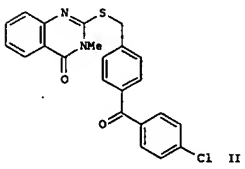
L11 ANSWER 35 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



L11 ANSWER 36 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:685153 CAPLUS
DOCUMENT NUMBER: 125:328725
TITLE: Preparation of heterocyclic compounds as antitumor agents
INVENTOR(S): Aono, Tetsuya; Marui, Shogo; Itoh, Fumio; Yamaoka, Masuo; Nakao, Masafumi
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan
SOURCE: Eur. Pat. Appl., 145 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

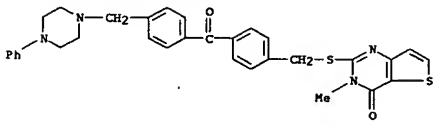
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 733633	A1	19960925	EP 1996-104176	19960315
EP 733633	B1	20030528		
R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
US 5753664	A	19980519	US 1996-614893	19960313
CA 2171932	AA	19960917	CA 1996-2171932	19960315
JP 09095485	A2	19970408	JP 1996-59508	19960315
AT 241625	E	20030615	AT 1996-104176	19960315
PRIORITY APPLN. INFO.:			JP 1995-56869 A	19950316
			JP 1995-191770 A	19950727
OTHER SOURCE(S):	MARPAT 125:328725			

GI

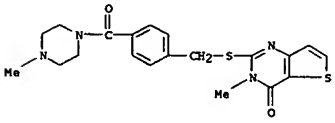


AB RZ1COR2 [I; R = (un)substituted condensed pyrimidinone or condensed pyridazinone ring (sic); R2 cyclic group; Z = divalent group; Z1 = divalent cyclic group] were prepared Thus, 2-mercapto-3-methyl-4(3H)-quinazolinone was etherified by 4-ClC6H4COC6H4(CH2Br)-4 to give title compound II. Data for in vivo antitumor activity of selected I were given.
IT 183166-32-7P 183169-65-5P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of heterocyclic compds. as antitumor agents)
RN 183166-32-7 CAPLUS
CN Thieno[3,2-d]pyrimidin-4(3H)-one, 3-methyl-2-[[[4-[4-[(4-phenyl-1-piperazinyl)methyl]benzoyl]phenyl]methyl]thio]- (9CI) (CA INDEX NAME)

L11 ANSWER 36 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 183169-65-5 CAPLUS
CN Piperazine, 1-[4-[[(3,4-dihydro-3-methyl-4-oxothieno[3,2-d]pyrimidin-2-yl)thio]methyl]benzoyl]-4-methyl-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

L11 ANSWER 37 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:241537 CAPLUS
DOCUMENT NUMBER: 124:289561
TITLE: Preparation of thienopyrimidinones as cyclic GMP phosphodiesterase inhibitors
INVENTOR(S): Oota, Tomoki; Kawashima, Yutaka; Hatayama, Katsuo
PATENT ASSIGNEE(S): Taisho Pharma Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07330777	A2	19951219	JP 1994-126555	19940608
PRIORITY APPLN. INFO.:			JP 1994-126555	19940608

OTHER SOURCE(S): MARPAT 124:289561
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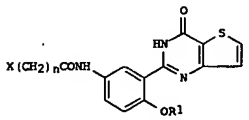
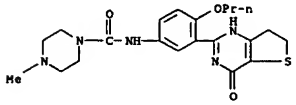


I

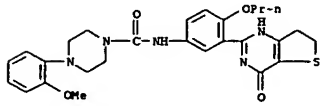
AB The title compds. I [R1 = alkyl; n = 0 or 1; X = halo, cycloalkyl, etc.] are prepared I [X = morpholino; n = 0; R1 = ethyl] (preparation given) at 28 μg/Kg decreased blood pressure in rats by 15 mmHg.

IT 175595-25-2P 175595-31-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of thienopyrimidinones as cyclic GMP phosphodiesterase inhibitors)

RN 175595-25-2 CAPLUS
CN 1-Piperazinecarboxamide, 4-methyl-N-[4-propoxy-3-(1,4,6,7-tetrahydro-4-oxothieno[3,2-d]pyrimidin-2-yl)phenyl]- (9CI) (CA INDEX NAME)



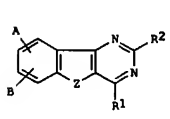
L11 ANSWER 37 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 175595-31-0 CAPLUS
CN 1-Piperazinecarboxamide, 4-(2-methoxyphenyl)-N-[4-propoxy-3-(1,4,6,7-tetrahydro-4-oxothieno[3,2-d]pyrimidin-2-yl)phenyl]- (9CI) (CA INDEX NAME)



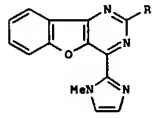
L11 ANSWER 38 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:294099 CAPLUS
DOCUMENT NUMBER: 122:81390
TITLE: Preparation of heterocycle-fused pyrimidine derivatives with potent blood sugar-lowering activity
INVENTOR(S): Ishida, Akihiko; Inage, Masaru; Akatsuka, Hidenori; Inamasu, Masanori; Mitsui, Takashi
PATENT ASSIGNEE(S): Tanabe Seiyaku Co, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 59 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06220059	A2	19940809	JP 1993-12128	19930128
PRIORITY APPLN. INFO.:			JP 1993-12128	19930128

OTHER SOURCE(S): MARPAT 122:81390
GI



I



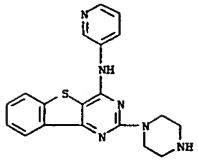
II

AB The title compds. [I; A, B = H, halo, NO2, NH2, lower alkoxy, alkylsulfonylamino, or alkylcarbonylamino; Z = O, S, (un)substituted NH; R1 = cyano, lower alkoxy, di-lower alkylamino-lower alkoxy, lower alkylthio, (un)substituted NH2 or heterocyclyl; R2 = cyano, (un)substituted NH2 or heterocyclyl], having potent blood sugar-lowering activity without inducing low blood sugar and increasing blood lactic acid (no data), are prepared Thus, 800 mg 2-chlorobenzofuro[3,2-d]pyrimidine (II; R = Cl) and 6.0 g piperazine were dissolved in 50 mL isoamyl alc. and the resulting solution was refluxed overnight to give 915 mg II (R = 1-piperazinyl).

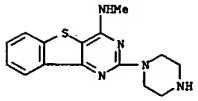
IT 160198-85-6P 160198-87-8P 160198-88-9P 160198-89-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of heterocycle-fused pyrimidine derivs. with potent blood sugar-lowering activity)

RN 160198-85-6 CAPLUS
CN [1]Benzothieno[3,2-d]pyrimidin-4-amine, 2-(1-piperazinyl)-N-3-pyridinyl- (9CI) (CA INDEX NAME)

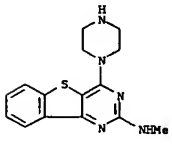
L11 ANSWER 38 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 160198-87-8 CAPLUS
CN [1]Benzothieno[3,2-d]pyrimidin-4-amine, N-methyl-2-(1-piperazinyl)- (9CI) (CA INDEX NAME)

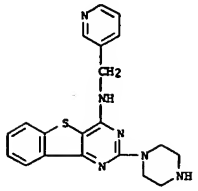


RN 160198-88-9 CAPLUS
CN [1]Benzothieno[3,2-d]pyrimidin-2-amine, N-methyl-4-(1-piperazinyl)- (9CI) (CA INDEX NAME)



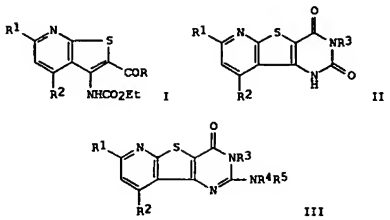
RN 160198-89-0 CAPLUS
CN [1]Benzothieno[3,2-d]pyrimidin-4-amine, 2-(1-piperazinyl)-N-(3-pyridinylmethyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 38 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



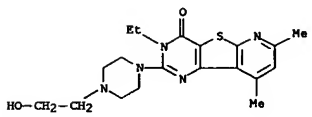
L11 ANSWER 39 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:517204 CAPLUS
DOCUMENT NUMBER: 119:117204
TITLE: Polycyclic azines with heteroatoms in 1- and 3-position. Part 40. Synthesis of 3-alkyl-2-aminopyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4-ones from 3-ethoxycarbonylaminothieno[2,3-b]pyridine-2-carboxylic esters and -2-carboxamides.
AUTHOR(S): Wagner, G.; Boehm, N.
CORPORATE SOURCE: Sekt. Biowiss., Univ. Leipzig, Leipzig, Germany
SOURCE: Pharmazie (1993), 48(2), 95-9
CODEN: PHARAT; ISSN: 0031-7144
DOCUMENT TYPE: Journal
LANGUAGE: German
GI

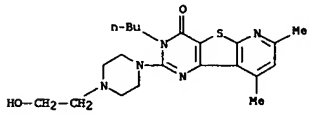


AB The reaction of thieno[2,3-b]pyridine-2-carboxylates I (R = OEt, NH2; R1 = Me, Ph; R2 = Me, CO2Et, H) with R3NH2 (R3 = H, Et, Bu, NH2, CH2CH2OH, CH2CH2NEt2) yielded the 3-alkylpyrido[3',3':4,5]thieno[3,2-d]pyrimidine-2,4-diones II. II were transformed by aminolysis to the title compds. III [NR4R5 = NHCH2CH2OH, NHCH2CH2NEt2, NHNH2, pyrrolidino, morpholino, 4-(2-hydroxyethylpiperazino), NHBu, NHPh] by chlorination and amination. Intermediate ureas were also isolated. II (R1 = R2 = Me, R3 = CH2CH2OH) was converted to II (R1 = R2 = Me, R3 = CH2CH2NHCH2CH2NH2 which did not cyclize to the tetracyclic compound
IT **148989-64-4P 148989-65-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 148989-64-4 CAPLUS
CN Pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4(3H)-one, 3-ethyl-2-[4-(2-hydroxyethyl)-1-piperazinyl]-7,9-dimethyl- (9CI) (CA INDEX NAME)

L11 ANSWER 39 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

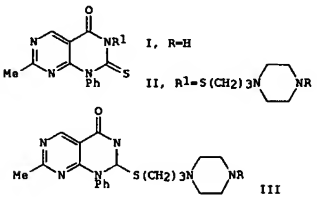


RN 148989-65-5 CAPLUS
CN Pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4(3H)-one, 3-butyl-2-[4-(2-hydroxyethyl)-1-piperazinyl]-7,9-dimethyl- (9CI) (CA INDEX NAME)



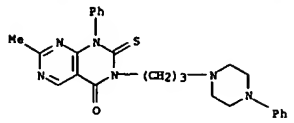
L11 ANSWER 40 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1992:439805 CAPLUS
DOCUMENT NUMBER: 117:39805
TITLE: Synthesis and properties of 4-substituted-1-piperazinyl-propyl derivatives of 1-phenyl-7-methylpyrimido[4,5-d]pyrimidin-4-one
AUTHOR(S): Malinka, Wieslaw; Zajac, Helena E.; Deren, Anna; Zawisza, Tadeusz; Wilimowski, Marian; Kedzierska-Gozdzik, Lidia; Barczynska, Jadwiga; Rutkowska, Maria; Wojewodzki, Wieslaw; et al.
CORPORATE SOURCE: Dep. Drug Chem., Med. Acad., Wroclaw, 50-137, Pol.
SOURCE: Polish Journal of Pharmacology and Pharmacy (1991), 43(5), 369-79
CODEN: PJPPAA; ISSN: 0301-0244
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

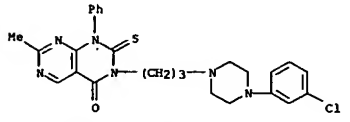


AB In reactions of 1-phenyl-7-methyl-4-oxo-2-thioxo-1,2,3,4-tetrahydropyrimido[4,5-d]pyrimidine (I) with 1-(3-chloropropyl)-4-methyl(Ph, 3-chlorophenyl, 2-pyrimidynyl, or 2-thiazolyl)piperazines mixts. of isomeric N- and S-substituted derivs. (II and III, R = e.g., Me, substituted aryl) were obtained. Isomers were separated by fractional crystallization
The structures of II and III were confirmed by elemental and spectral analyses. In pharmacol. screening, (II and III, R = Ph) displayed rather strong analgesic action, inhibited amphetamine hyperactivity and abolished apomorphine stereotypy. II (R = 2-thiazolyl or 2-pyrimidinyl) and III (R = 2-thiazolyl) attenuated m-chlorophenylpiperazine-induced hypothermia.
IT **142287-33-0P 142287-34-1P 142287-35-2P**
142287-36-3P 142287-37-4P 142287-38-5P
142287-39-6P 142287-40-9P 142300-99-0P
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(preparation and pharmacol. of, structure in relation to)
RN 142287-33-0 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 2,3-dihydro-7-methyl-1-phenyl-3-[3-(4-phenyl-1-piperazinyl)propyl]-2-thioxo- (9CI) (CA INDEX NAME)

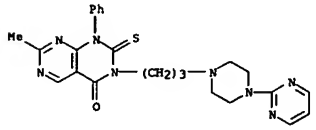
L11 ANSWER 40 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 142287-34-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 3-[3-[4-(3-chlorophenyl)-1-piperazinyl]propyl]-2,3-dihydro-7-methyl-1-phenyl-2-thioxo- (9CI) (CA INDEX NAME)

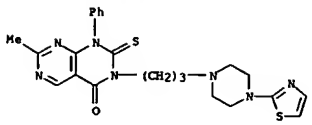


RN 142287-35-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 2,3-dihydro-7-methyl-1-phenyl-3-[3-[4-(2-pyrimidinyl)-1-piperazinyl]propyl]-2-thioxo- (9CI) (CA INDEX NAME)

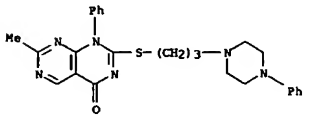


RN 142287-36-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 2,3-dihydro-7-methyl-1-phenyl-3-[3-[4-(2-thiazolyl)-1-piperazinyl]propyl]-2-thioxo- (9CI) (CA INDEX NAME)

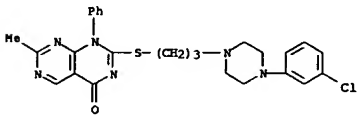
L11 ANSWER 40 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



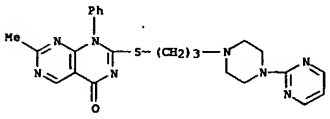
RN 142287-37-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 7-methyl-1-phenyl-2-[[3-(4-phenyl-1-piperazinyl)propyl]thio]- (9CI) (CA INDEX NAME)



RN 142287-38-5 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 2-[[3-[4-(3-chlorophenyl)-1-piperazinyl]propyl]thio]-7-methyl-1-phenyl- (9CI) (CA INDEX NAME)

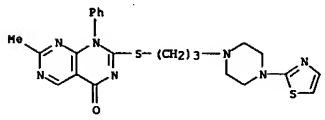


RN 142287-39-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 7-methyl-1-phenyl-2-[[3-[4-(2-pyrimidinyl)-1-piperazinyl]propyl]thio]- (9CI) (CA INDEX NAME)

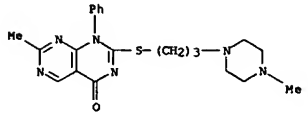


L11 ANSWER 40 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

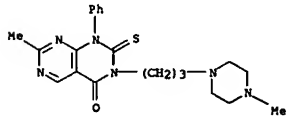
RN 142287-40-9 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 7-methyl-1-phenyl-2-[[3-[4-(2-thiazolyl)-1-piperazinyl]propyl]thio]- (9CI) (CA INDEX NAME)



RN 142300-99-0 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 7-methyl-2-[[3-(4-methyl-1-piperazinyl)propyl]thio]-1-phenyl- (9CI) (CA INDEX NAME)



IT 142287-32-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as analgesic)
RN 142287-32-9 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4(1H)-one, 2,3-dihydro-7-methyl-3-[3-(4-methyl-1-piperazinyl)propyl]-1-phenyl-2-thioxo- (9CI) (CA INDEX NAME)

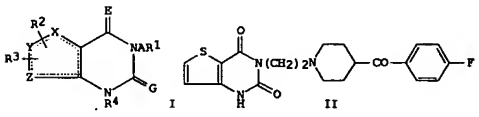


L11 ANSWER 41 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:139045 CAPLUS
DOCUMENT NUMBER: 112:139045
TITLE: Preparation of thienopyrimidine-2,4-diones as allergy inhibitors
INVENTOR(S): Fukumi, Hiroshi; Sakamoto, Toshiaki; Sugiyama, Mitsuo; Yamaguchi, Takeshi
PATENT ASSIGNEE(S): Sankyo Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

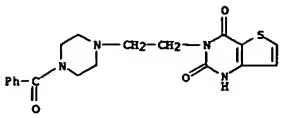
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01213284	A2	19890828	JP 1988-38871	19880222
PRIORITY APPLN. INFO.:			JP 1988-38871	19880222

OTHER SOURCE(S): MARPAT 112:139045
GI



AB Title compds. I (one of X, Y, Z = S and other = C; E, G = O, S; R1 = substituted piperidino, substituted piperazino; R2, R3 = H, alkyl, aryl, halo; R4 = H, alkyl, acyl; A = alkylene) are prepared. Treatment of 2,3-dihydro-5(5H)-oxazolo[3,2-a]thieno[3,2-d]pyrimidinone with 4-fluorobenzoylpiperidine in DMF gave thienopyrimidine II. The latter at 0.033 mg kg i.v. showed 84% inhibition of histamine-induced respiratory tract constriction in guinea pigs.
IT 125809-01-0P 125809-08-7P 125809-10-1P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as allergy inhibitor)
RN 125809-01-0 CAPLUS
CN Piperazine, 1-benzoyl-4-[2-(1,4-dihydro-2,4-dioxothieno[3,2-d]pyrimidin-3(2H)-yl)ethyl]-, monohydrochloride (9CI) (CA INDEX NAME)

L11 ANSWER 41 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

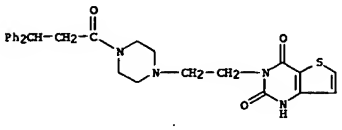


● HCl

RN 125809-08-7 CAPLUS
CN Piperazine, 1-[2-(1,4-dihydro-2,4-dioxothieno[3,2-d]pyrimidin-3(2H)-yl)ethyl]-4-(1-oxo-3,3-diphenylpropyl)-, (2Z)-2-butenedioate (1:1) (9CI) (CA INDEX NAME)

CM 1

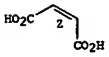
CRN 125809-07-6
CMF C27 H28 N4 O3 S



CM 2

CRN 110-16-7
CMF C4 H4 O4

Double bond geometry as shown.

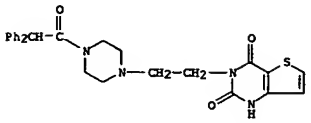


RN 125809-10-1 CAPLUS
CN Piperazine, 1-[2-(1,4-dihydro-2,4-dioxothieno[3,2-d]pyrimidin-3(2H)-yl)ethyl]-4-(diphenylacetyl)-, (2Z)-2-butenedioate (1:1) (9CI) (CA INDEX NAME)

CM 1

L11 ANSWER 41 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

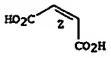
CRN 125809-09-8
CMF C26 H26 N4 O3 S



CM 2

CRN 110-16-7
CMF C4 H4 O4

Double bond geometry as shown.

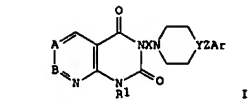


L11 ANSWER 42 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

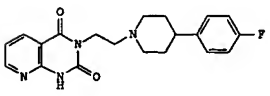
ACCESSION NUMBER: 1990:7502 CAPLUS
DOCUMENT NUMBER: 112:7502
TITLE: Preparation and formulation of heterocyclylpyridopyrimidines as analgesics
INVENTOR(S): Raddatz, Peter; Weber, Wolf Dietrich; Barber, Andrew; Wolf, Hans Peter; Seyfried, Christoph
PATENT ASSIGNEE(S): Merck Patent G.m.b.H., Fed. Rep. Ger.
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3738844	A1	19890524	DE 1987-3738844	19871116
EP 316668	A2	19890524	EP 1988-118320	19881103
EP 316668	A3	19900919		
EP 316668	B1	19930519		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
AT 89481	E	19930615	AT 1988-118320	19881103
ES 2069541	T3	19950516	ES 1988-118320	19881103
AU 8825107	A1	19890518	AU 1988-25107	19881114
AU 616695	B2	19911107		
CA 1317549	A1	19930511	CA 1988-582914	19881114
HU 48818	A2	19890728	HU 1988-5883	19881115
HU 203199	B	19910628		
US 4950648	A	19900821	US 1988-271463	19881115
JP 01160919	A2	19890623	JP 1988-287879	19881116
ZA 8808574	A	19890830	ZA 1988-8574	19881116
PRIORITY APPLN. INFO.:			DE 1987-3738844	A 19871116
			EP 1988-118320	A 19881103

OTHER SOURCE(S): CASREACT 112:7502; MARPAT 112:7502
GI



I



II

AB The title compds [I; AB = (CH)2, NCR2; X = C2-4 alkylene; Y = CH, N; Z = bond, CO; Ar = (substituted) Ph, thienyl, pyridyl; R1 = H, dialkylaminoalkyl, carboxylalkyl, alkoxycarbonylalkyl, carbamoylalkyl; R2 = H, alkyl, alkoxy, alkylthio], useful as analgesics (no data), were

L11 ANSWER 42 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

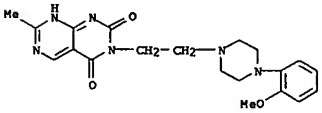
prepd. Thus, Et 2-ethoxycarbonylaminonicotinate and 1-(2-aminoethyl)-4-(p-fluorobenzoyl)piperidine were heated at 190° for 1 h to give pyridopyrimidine II. Tablet, dragee, capsule, and injection formulations are given.

IT 110624-24-3P 110624-25-4P 110624-27-6P
110624-28-7P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as analgesic)

RN 110624-24-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(2-methoxyphenyl)-1-piperazinyl]ethyl]-7-methyl-, (2E)-2-butenedioate (2:1) (9CI) (CA INDEX NAME)

CM 1

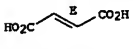
CRN 110624-23-2
CMF C20 H24 N6 O3



CM 2

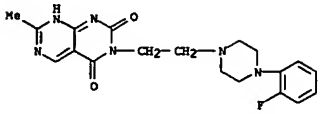
CRN 110-17-8
CMF C4 H4 O4

Double bond geometry as shown.



RN 110624-25-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(2-fluorophenyl)-1-piperazinyl]ethyl]-7-methyl-, monohydrochloride (9CI) (CA INDEX NAME)

L11 ANSWER 42 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

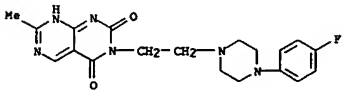


● HCl

RN 110624-27-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(4-fluorophenyl)-1-piperazinyl]ethyl]-7-methyl-, (2E)-2-butenedioate (1:1) (9CI) (CA INDEX NAME)

CM 1

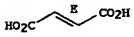
CRN 110624-26-5
CMF C19 H21 F N6 O2



CM 2

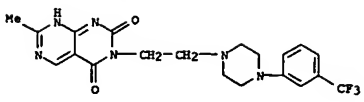
CRN 110-17-8
CMF C4 H4 O4

Double bond geometry as shown.



RN 110624-28-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 7-methyl-3-[2-[4-[3-(trifluoromethyl)phenyl]-1-piperazinyl]ethyl]- (9CI) (CA INDEX NAME)

L11 ANSWER 42 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

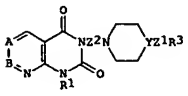


L11 ANSWER 43 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1988:454786 CAPLUS
DOCUMENT NUMBER: 109:54786
TITLE: Preparation of dioxopyridopyrimidines and -pyrimidopyrimidines as antihypertensives
INVENTOR(S): Raddatz, Peter; Bergmann, Rolf
PATENT ASSIGNEE(S): Merck Patent G.m.b.H., Fed. Rep. Ger.
SOURCE: Ger. Offen., 12 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3601731	A1	19870723	DE 1986-3601731	19860122
PRIORITY APPLN. INFO.:			DE 1986-3601731	19860122

OTHER SOURCE(S): CASREACT 109:54786
GI

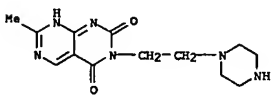


I

AB The title compds. [I; R1 = H, aminoalkyl, carboxyalkyl, alkoxycarbonylalkyl, carbamoylalkyl; R2 = H, alkyl, alkoxy, alkylthio; R3 = (substituted) Ph, thienyl, pyridyl; A-B = CHCH, NCR2; Y = CH, N; Z1 = bond, CO; Z2 = C2-4 alkylene] and their salts were prepared as antihypertensives (no data). Et 2-(ethoxycarbonylamino)nicotinate 2.06 g and 1-(2-aminoethyl)-4-(O-methoxyphenyl)piperazine 2.35 g were heated at 190° for 1 h to give I (R1 = H, R3 = 2-MeOC6H4, A-B = CHCH, Y = N, Z1 = bond, Z2 = CH2CH2) (II). Tablets were prepared containing II, lactose, starch, talc, and Mg stearate. Capsules and ampules for injection were also prepared

IT 110624-46-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(benzoylation of)

RN 110624-46-9 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 7-methyl-3-[2-(1-piperazinyl)ethyl]- (9CI) (CA INDEX NAME)

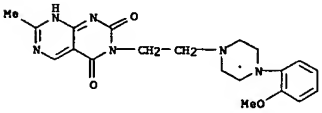


IT **110624-23-2P 110624-24-3P 110624-25-4P**
110624-27-6P 110624-28-7P 110624-31-2P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological

L11 ANSWER 43 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of, as antihypertensive)

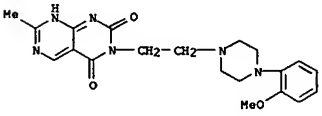
RN 110624-23-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(2-methoxyphenyl)-1-piperazinyl]ethyl]-7-methyl- (9CI) (CA INDEX NAME)



RN 110624-24-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(2-methoxyphenyl)-1-piperazinyl]ethyl]-7-methyl-, (2E)-2-butenedioate (2:1) (9CI) (CA INDEX NAME)

CM 1

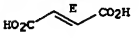
CRN 110624-23-2
CMF C20 H24 N6 O3



CM 2

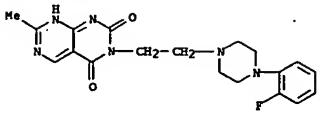
CRN 110-17-8
CMF C4 H4 O4

Double bond geometry as shown.



RN 110624-25-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(2-fluorophenyl)-1-piperazinyl]ethyl]-7-methyl-, monohydrochloride (9CI) (CA INDEX NAME)

L11 ANSWER 43 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

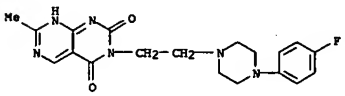


● HCl

RN 110624-27-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(4-fluorophenyl)-1-piperazinyl]ethyl]-7-methyl-, (2E)-2-butenedioate (1:1) (9CI) (CA INDEX NAME)

CM 1

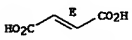
CRN 110624-26-5
CMF C19 H21 F N6 O2



CM 2

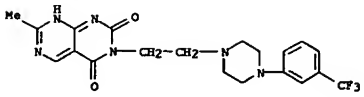
CRN 110-17-8
CMF C4 H4 O4

Double bond geometry as shown.

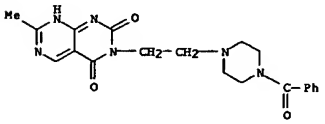


RN 110624-28-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 7-methyl-3-[2-[4-[3-(trifluoromethyl)phenyl]-1-piperazinyl]ethyl]- (9CI) (CA INDEX NAME)

L11 ANSWER 43 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

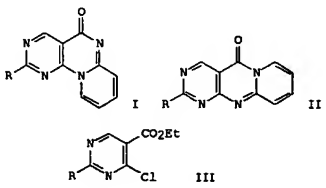


RN 110624-31-2 CAPLUS
CN Piperazine, 1-benzoyl-4-[2-(1,4-dihydro-7-methyl-2,4-dioxopyrimido[4,5-d]pyrimidin-3(2H)-yl)ethyl]- (9CI) (CA INDEX NAME)



L11 ANSWER 44 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

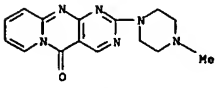
ACCESSION NUMBER: 1985:487832 CAPLUS
DOCUMENT NUMBER: 103:87832
TITLE: Reactions of ethyl 4-chloro-5-pyrimidinecarboxylates with 2-aminopyridine. Synthesis of 5H-pyrido[1,2-a]pyrimido[5,4-e]pyrimidin-5-ones and 5H-pyrido[1,2-a]pyrimido[4,5-d]pyrimidin-5-ones and rearrangement of the former to the latter
AUTHOR(S): Kim, Dong Han
CORPORATE SOURCE: Res. Div., Wyeth Lab., Inc., Philadelphia, PA, 19101, USA
SOURCE: Journal of Heterocyclic Chemistry (1985), 22(1), 173-6
CODEN: JHTCAD; ISSN: 0022-152X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 103:87832
GI



AB Title compds. I and II (R = MeS, Ph) were synthesized from pyrimidinecarboxylates III and 2-aminopyridine. I were obtained directly upon heating the reactants in ethanol, and the latter were prepared by the fusion of Et 4-(2-pyridylamino)-5-pyrimidinecarboxylates obtained as minor products from the above reaction. Heating II (R = MeS) with morpholine gave II (R = morpholino).

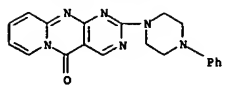
IT 97693-17-9P 97693-18-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 97693-17-9 CAPLUS
CN 5H-Pyrido[1,2-a]pyrimido[4,5-d]pyrimidin-5-one, 2-(4-methyl-1-piperazinyl)- (9CI) (CA INDEX NAME)

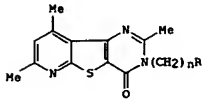


RN 97693-18-0 CAPLUS
CN 5H-Pyrido[1,2-a]pyrimido[4,5-d]pyrimidin-5-one, 2-(4-phenyl-1-piperazinyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 44 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



L11 ANSWER 45 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1984:150633 CAPLUS
DOCUMENT NUMBER: 100:150633
TITLE: Synthesis and pharmacological activity of 3-substituted pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4(3H)-ones
AUTHOR(S): Bousquet, E.; Guerrera, F.; Siracusa, M. A.; Caruso, A.; Amico-Roxas, M.
CORPORATE SOURCE: Fac. Pharm., Univ. Catania, Catania, Italy
SOURCE: Farmaco, Edizione Scientifica (1984), 39(2), 110-19
CODEN: FRPSAX; ISSN: 0430-0920
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



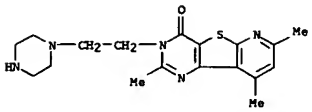
I

AB Twelve title compds. I (R = NMe2, NEt2, Ph, 4-MeOC6H4, 2,4-MeNO2C6H3, 1-morpholinyl, 4-pyridyl, pyrrolidinyl, and piperazinyl; n = 0-3) were prepared from 2,7,9,-trimethyl-4H-pyrido [3',2':4,5]thieno[3,2-d][1,3]oxazin-4-one [58327-87-0] and evaluated for analgesic, anti-inflammatory, and antipyretic activities. The ulcerogenic and behavioral effects of the compds. were also studied. Compds. I (R = Ph, n = 1) [89481-28-7], I (R = 4-MeOC6H4, n = 0) [89481-29-8], and I (R = 2,4-MeNO2C6H3, n = 0) [89481-30-1] demonstrated the greatest pharmacol. activity. None of I showed either ulcerogenic or toxic effects. Structure-activity relations are discussed.

IT **89481-17-4P 89481-25-4P**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(preparation and pharmacol. of, structure in relation to)

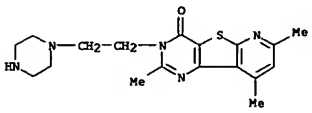
RN 89481-17-4 CAPLUS
CN Pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4(3H)-one, 2,7,9-trimethyl-3-[2-(1-piperazinyl)ethyl]-, dihydrochloride (9CI) (CA INDEX NAME)

L11 ANSWER 45 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



●2 HCl

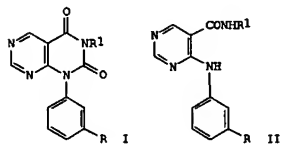
RN 89481-25-4 CAPLUS
CN Pyrido[3',2':4,5]thieno[3,2-d]pyrimidin-4(3H)-one, 2,7,9-trimethyl-3-[2-(1-piperazinyl)ethyl]- (9CI) (CA INDEX NAME)



L11 ANSWER 46 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:601572 CAPLUS
DOCUMENT NUMBER: 87:201572
TITLE: 1-Phenylpyrimido[4,5-d]pyrimidine-2,4(1H,3H)-diones
INVENTOR(S): Noda, Kanji; Nakagawa, Akira; Yamasaki, Shunzo; Noguchi, Kazuki; Ide, Hiroyuki
PATENT ASSIGNEE(S): Hisamitsu Pharmaceutical Co., Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52027796	A2	19770302	JP 1975-91199	19750723
JP 59020677	B4	19840515		
PRIORITY APPLN. INFO.:			JP 1975-91199 A	19750723

GI



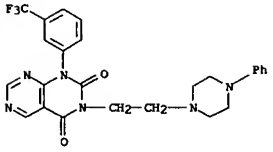
I II

AB Thirty-seven pyrimidopyrimidinediones I (R = H, CF3, F, Cl, Br, NO2; R1 = H, Et, allyl, CH2OMe, N-methylpiperazinoethyl, etc.), having central depressant, analgesic, antiinflammatory and diuretic activities (no data), were prepared by cyclizing II with COCl2, Cl3CCOCl, (EtO)2CO, 1,1'-carbonyldiimidazole, etc. Thus, 2.4 g II (R = H, R1 = Et) was treated with NaH in THF and stirred with COCl2 in CCl4 1 h to give 1.9 g I (R = H, R1 = Et).

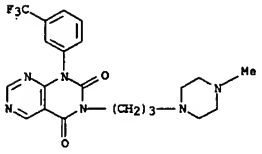
IT **63011-40-5P 63011-42-7P 63060-90-2P**
63060-92-4P 64055-51-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 63011-40-5 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-(4-phenyl-1-piperazinyl)ethyl]-1-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)

L11 ANSWER 46 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

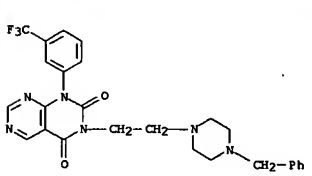


RN 63011-42-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[3-(4-methyl-1-piperazinyl)propyl]-1-[3-(trifluoromethyl)phenyl]-, dihydrochloride (9CI) (CA INDEX NAME)



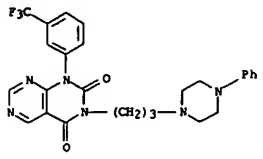
●2 HCl

RN 63060-90-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(phenylmethyl)-1-piperazinyl]ethyl]-1-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



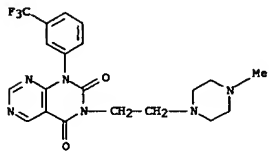
RN 63060-92-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[3-(4-phenyl-1-piperazinyl)propyl]-1-[3-(trifluoromethyl)phenyl]-, dihydrochloride (9CI) (CA INDEX NAME)

L11 ANSWER 46 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



●2 HCl

RN 64055-51-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-(4-methyl-1-piperazinyl)ethyl]-1-[3-(trifluoromethyl)phenyl]-, dihydrochloride (9CI) (CA INDEX NAME)

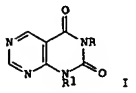


●2 HCl

L11 ANSWER 47 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:468404 CAPLUS
DOCUMENT NUMBER: 87:68404
TITLE: Pyrimido[4,5-d]pyrimidine derivatives
INVENTOR(S): Noda, Kanji; Nakagawa, Akira; Yamasaki, Shunzo; Noguchi, Kazuki; Yoshitake, Tadaaki; Ide, Hiroyuki
PATENT ASSIGNEE(S): Hisamitsu Pharmaceutical Co., Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 51136695	A2	19761126	JP 1975-46642	19750415
JP 58026757	B4	19830604		
PRIORITY APPLN. INFO.:			JP 1975-46642 A	19750415

GI



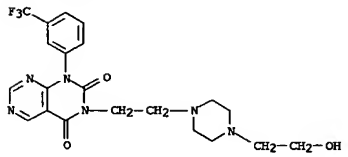
I

AB Forty-three pyrimido[4,5-d]pyrimidine derivs.I (R = Me, Et, Pr, allyl, propargyl, cyclopropylmethyl, benzylpiperazinylethyl, etc.; R1 = 3-R2C6H4, R2 = H, F, Cl, Br, CF3, NO2) (II) were prepared by reaction of I (R = H) with RX (X = halo, organic sulfonic acid group). II had central nervous system depressing, analgesic, and antiinflammatory activities (no data). Thus, 3.08 g I (R = H, R1 = 3-F3CC6H4) in DMF was stirred with 0.48 g 50% NaH 1 h at room temperature, 3.68 g ClCH2CO2Et added, and the whole stirred 3 h at room temperature to give 3.5 g I (R1 = 3-F3CC6H4, R = EtO2CCH2).

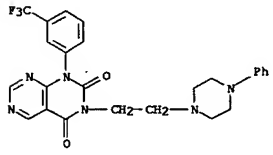
IT **63011-36-9P 63011-40-5P 63011-41-6P**
63011-42-7P 63060-90-2P 63060-92-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 63011-36-9 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(2-hydroxyethyl)-1-piperazinyl]ethyl]-1-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)

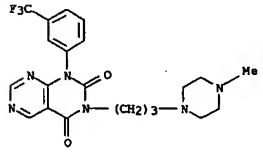
L11 ANSWER 47 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 63011-40-5 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-(4-phenyl-1-piperazinyl)ethyl]-1-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)

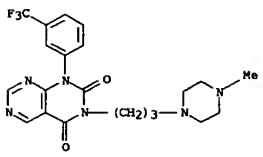


RN 63011-41-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[3-(4-methyl-1-piperazinyl)propyl]-1-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



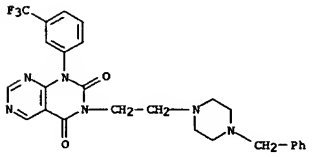
RN 63011-42-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[3-(4-methyl-1-piperazinyl)propyl]-1-[3-(trifluoromethyl)phenyl]-, dihydrochloride (9CI) (CA INDEX NAME)

L11 ANSWER 47 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

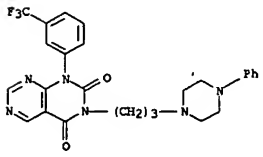


●2 HCl

RN 63060-90-2 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[2-[4-(phenylmethyl)-1-piperazinyl]ethyl]-1-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



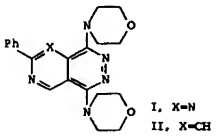
RN 63060-92-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidine-2,4(1H,3H)-dione, 3-[3-(4-phenyl-1-piperazinyl)propyl]-1-[3-(trifluoromethyl)phenyl]-, dihydrochloride (9CI) (CA INDEX NAME)



●2 HCl

L11 ANSWER 47 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

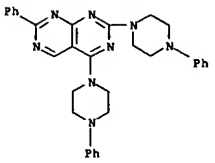
L11 ANSWER 48 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1976:586482 CAPLUS
DOCUMENT NUMBER: 85:186482
TITLE: Structure-activity relations of the diuretic activity of triaza- and tetraazanaphthalene compounds
AUTHOR(S): Nishikawa, Kohei; Shimakawa, Hisao; Inada, Yoshiyuki; Shibouta, Yumiko; Kikuchi, Shintaro; Yurugi, Shojiro; Oka, Yoshikazu
CORPORATE SOURCE: Cent. Res. Div., Takeda Chem. Ind., Ltd., Osaka, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1976), 24(9), 2057-77
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I, X=N
II, X=CH

AB The diuretic activity of 219 nitrogen containing heterocyclic compds., classified into 13 groups based on the structural features, was studied in saline loaded rats. Of the compds. studied, 104 were active at oral doses of 10-30 mg/kg. Several of the pyrimidopyridazines, pyridazinopyridazines and pyridopyridazines produced as potent diuresis and natriuresis as hydrochlorothiazide [58-93-5] at the oral dose of 0.1 mg/kg; DS 210 (I) [33222-18-3] and DS 511 (II) [39632-88-7] were selected for more extensive evaluation as diuretic agents. Structure-activity relations of the tested compds. are discussed.
IT 52047-09-3
RL: BIOL (Biological study)
(diuretic)
RN 52047-09-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 7-phenyl-2,4-bis(4-phenyl-1-piperazinyl)- (9CI) (CA INDEX NAME)

L11 ANSWER 48 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



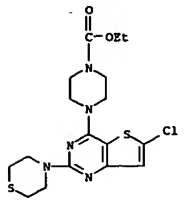
L11 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1974:463656 CAPLUS
DOCUMENT NUMBER: 81:63656
TITLE: 2-Aminothieno[3,2-d]pyrimidines
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H.
SOURCE: Ger. Offen., 15 pp. Addn. to Ger. Offen. 2,137,341 (CA 78; 124620g).
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2215299	A1	19731025	DE 1972-2215299	19720329
HU 163960	P	19731128	HU 1972-TO875	19720502
ES 402302	A1	19750401	ES 1972-402302	19720502
DD 97656	C	19730514	DD 1972-162711	19720503
AU 7241815	A1	19731108	AU 1972-41815	19720503
AT 318619	B	19741111	AT 1972-3829	19720503
DK 129844	B	19741125	DK 1972-2196	19720503
GB 1393161	A	19750507	GB 1972-20584	19720503
US 3888851	A	19750610	US 1972-249782	19720503
IL 39341	A1	19750831	IL 1972-39341	19720503
PL 82381	P	19751031	PL 1972-155128	19720503
BE 783044	A1	19721106	BE 1972-117121	19720504
NL 7206041	A	19721107	NL 1972-6041	19720504

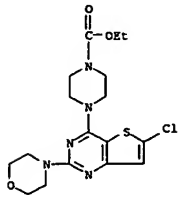
PRIORITY APPLN. INFO.: DE 1971-2121950 A 19710504
DE 1971-2137341 A 19710726
DE 1971-2137431 A 19710726
DE 1972-2215299 A 19720329

GI For diagram(s), see printed CA Issue.
AB Seventeen thienopyrimidines I [NR2 = e.g. N(CH2CH2OH)2, 1-piperazinyl, 4-methyl-1-piperazinyl, or morpholino; R1 = e.g. thiomorpholino or 1-piperazinyl; R2 = H or Cl; R3 = Cl, Me, H, or Br], useful as antihypertensives or antithrombotic drugs, were prepared by amination of the 2-chloro compound II with R2NH.
IT 53406-22-7P 53406-23-8P 53406-24-9P
53406-25-0P 53406-26-1P 53406-27-2P
53406-28-3P 53406-29-4P 53406-30-7P
53406-31-8P 53478-87-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 53406-22-7 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[6-chloro-2-(4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

L11 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

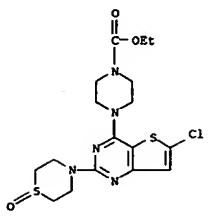


RN 53406-23-8 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[6-chloro-2-(4-morpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

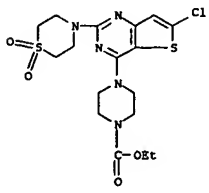


RN 53406-24-9 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[6-chloro-2-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

L11 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

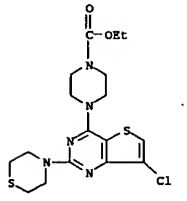


RN 53406-25-0 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[6-chloro-2-(1,1-dioxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

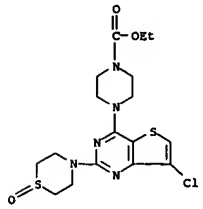


RN 53406-26-1 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[7-chloro-2-(4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

L11 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

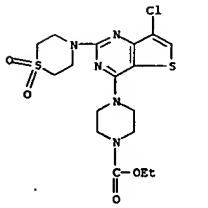


RN 53406-27-2 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[7-chloro-2-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

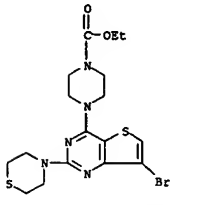


RN 53406-28-3 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[7-chloro-2-(1,1-dioxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

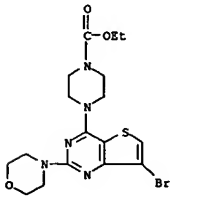
L11 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



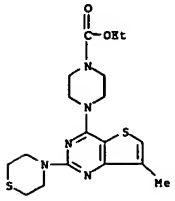
RN 53406-29-4 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[7-bromo-2-(4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)



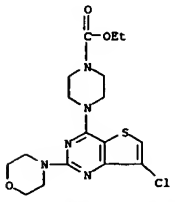
RN 53406-30-7 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[7-bromo-2-(4-morpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)



L11 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 53406-31-8 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[7-methyl-2-(4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

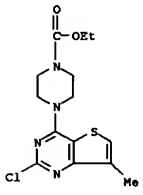


RN 53478-87-8 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[7-chloro-2-(4-morpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

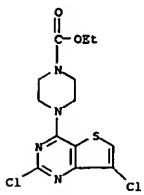


IT 53406-18-1 53406-19-2 53406-20-5
53406-21-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with amines)
RN 53406-18-1 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(2,7-dichlorothieno[3,2-d]pyrimidin-4-yl)-, ethyl ester (9CI) (CA INDEX NAME)

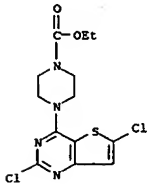
L11 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 53406-21-6 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(2-chloro-7-methylthieno[3,2-d]pyrimidin-4-yl)-, ethyl ester (9CI) (CA INDEX NAME)



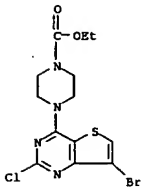
L11 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



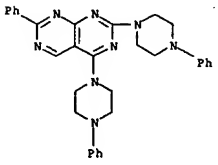
RN 53406-19-2 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(2,6-dichlorothieno[3,2-d]pyrimidin-4-yl)-, ethyl ester (9CI) (CA INDEX NAME)



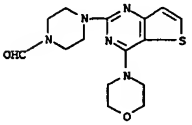
RN 53406-20-5 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(7-bromo-2-chlorothieno[3,2-d]pyrimidin-4-yl)-, ethyl ester (9CI) (CA INDEX NAME)



L11 ANSWER 50 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1974:133381 CAPLUS
DOCUMENT NUMBER: 80:133381
TITLE: Syntheses of N-heterocyclic compounds. XVIII. Syntheses of disubstituted amino-2-phenylpyrimido-pyrimidine derivatives
AUTHOR(S): Yurugi, Shojiro; Miyake, Akio; Tada, Norio
CORPORATE SOURCE: Takeda Chem. Ind., Ltd., Osaka, Japan
SOURCE: Takeda Kenkyushoho (1973), 32(3), 251-8
CODEN: TAKHAA; ISSN: 0371-5167
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
GI For diagram(s), see printed CA Issue.
AB Hofmann rearrangement of 2-phenylpyrimidine-4,5-dicarboxamide (I) gave a mixture of 5,7-dihydroxy-2-phenylpyrimido[4,5-d]pyrimidine (II) and 6,8-di-hydroxy-2-phenylpyrimido[5,4-d]pyrimidine (III). II was also prepared by the reaction of 4-amino-5-carbamoyl-2-phenylpyrimidine (IV) with urea. Among the disubstituted amino compds. derived from II and III, 5,7-dimorpholino-2-phenylpyrimido-[4,5-d]pyrimidine (V) showed diuretic activity.
IT 52047-09-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 52047-09-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 7-phenyl-2,4-bis(4-phenyl-1-piperazinyl)- (9CI) (CA INDEX NAME)

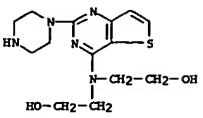


L11 ANSWER 51 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1974:78283 CAPLUS
DOCUMENT NUMBER: 80:78283
TITLE: Simultaneous labeling with stable and radioactive isotopes in drug metabolism studies
AUTHOR(S): Zimmer, Arno; Prox, Axel; Pelzer, Helmut; Hankwitz, Rainer
CORPORATE SOURCE: Thomae-Res. Lab., Biberach/Riss, Fed. Rep. Ger.
SOURCE: Biochemical Pharmacology (1973), 22(18), 2213-22
CODEN: BCPCA6; ISSN: 0006-2952
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A mixture of 2-13C- and 2-14C-labeled 4-morpholino-2-piperazinothieno[3,2-d]pyrimidine-2HCl (VK 774-2HCl) (I-2HCl) [33548-44-6], prepared by a simultaneous labeling technique, after oral administration to rats was metabolized to 2-(4-acetylpiperazino)-4-morpholinothieno[3,2-d]pyrimidine [50791-91-8], 2-(4-formylpiperazino)-4-morpholinothieno[3,2-d]pyrimidine [33548-47-9], 2-amino-4-morpholinothieno[3,2-d]pyrimidine [50603-28-6], 2-[2-(acetylamino)ethylamino]-4-morpholinothieno[3,2-d]pyrimidine [50603-29-7], 2-(4-acetylpiperazino)-4-diethanolaminothieno[3,2-d]pyrimidine [50603-30-0], 4-diethanolamino-2-(4-formylpiperazino)thieno[3,2-d]pyrimidine [50603-31-1], and 4-diethanolamino-2-piperazinothieno[3,2-d]pyrimidine [36926-00-8].
IT 33548-47-9 36926-00-8 50603-30-0
50603-31-1 50791-91-8
RL: FORM (Formation, nonpreparative)
(formation of, as VK 774 metabolite)
RN 33548-47-9 CAPLUS
CN 1-Piperazinecarboxaldehyde, 4-[4-(4-morpholinyl)thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)

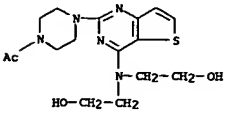


RN 36926-00-8 CAPLUS
CN Ethanol, 2,2'-[[2-(1-piperazinyl)thieno[3,2-d]pyrimidin-4-yl]imino]bis- (9CI) (CA INDEX NAME)

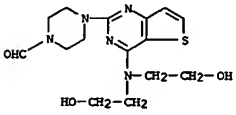
L11 ANSWER 51 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



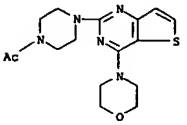
RN 50603-30-0 CAPLUS
CN Piperazine, 1-acetyl-4-[4-[bis(2-hydroxyethyl)amino]thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)



RN 50603-31-1 CAPLUS
CN 1-Piperazinecarboxaldehyde, 4-[4-[bis(2-hydroxyethyl)amino]thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)



RN 50791-91-8 CAPLUS
CN Piperazine, 1-acetyl-4-[4-(4-morpholinyl)thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)



L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1973:72184 CAPLUS
DOCUMENT NUMBER: 78:72184
TITLE: Thieno[3,2-d]pyrimidines
INVENTOR(S): Narr, Berthold; Roch, Josef; Mueller, Erich; Nickl, Josef
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H.
SOURCE: Ger. Offen., 40 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

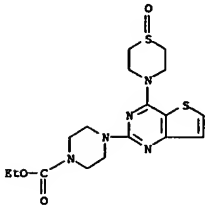
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2121950	A	19721123	DE 1971-2121950	19710504
SU 461506	D	19750225	SU 1972-1780362	19720429
HU 163960	P	19731128	HU 1972-TO875	19720502
ES 402302	A1	19750401	ES 1972-402302	19720502
DD 97656	C	19730514	DD 1972-162711	19720503
AU 7241815	A1	19731108	AU 1972-41815	19720503
ZA 7203016	A	19740130	ZA 1972-3016	19720503
AT 318619	B	19741111	AT 1972-3829	19720503
DK 129844	B	19741125	DK 1972-2196	19720503
GB 1393161	A	19750507	GB 1972-20584	19720503
US 3888851	A	19750610	US 1972-249782	19720503
IL 39341	A1	19750831	IL 1972-39341	19720503
PL 82381	P	19751031	PL 1972-155128	19720503
BE 783044	A1	19721106	BE 1972-117121	19720504
NL 7206041	A	19721107	NL 1972-6041	19720504
FR 2135294	A5	19721215	FR 1972-15929	19720504
FR 2135294	B1	19751017		
ES 405215	A1	19750716	ES 1972-405215	19720727

PRIORITY APPLN. INFO.:

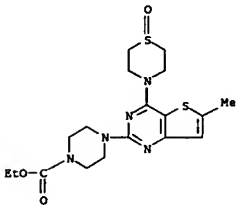
DE 1971-2121950	A	19710504
DE 1971-2137341	A	19710726
DE 1971-2137431	A	19710726
DE 1972-2215299	A	19720329

GI For diagram(s), see printed CA Issue.
AB The thienopyrimidines I (e.g., R and R1 = piperazinyl derivs., thiomorpholino or their 1-oxides; R2 and R3 = H, Me, Ph; 39 compds.), useful as thrombosis inhibitors, were prepared: (A) amination of I (R or R1 is a reactive group such as halo, S(O)nQ; n = 0-2; Q = e.g., Me), by RH or R1H; (B) oxidation of I (R or R1 = thiomorpholino derivative, hexahyro-1,4-thiazepino, or MeSCH2CH2NMe) with H2O2, KMnO4, or NaIO4. If R and (or) R1 = 4-unsubstituted piperazinyl, etc., the free imino group is protected in A. Thus, 0.035 mole 2-chloro-4-thiomorpholinothieno[3,2-d]pyrimidine S1-oxide was heated 20 min at 150° with 0.088 mole 1-carbethoxypiperazine to give I (R = 4-carbethoxypiperazinyl, R1 = thiomorpholino 1-oxide, R2 = R3 = H) (II). II refluxed with KOH-HOCHMe2 10 hr gave the 2-piperazinyl analog (III), also prepared by oxidation of 2-piperazinyl-4-thiomorpholinothieno-[3,2-d]pyrimidine (IV) with NaIO4. IV treated with KMnO4 gave the thiomorpholino 1,1-dioxide analog.
IT 39559-78-9P 39559-80-3P 39559-82-5P
39559-84-7P 39559-86-9P 39559-88-1P
39559-90-5P 39559-91-6P 39559-92-7P
39559-93-8P 39559-94-9P 39559-95-0P
39559-96-1P 39560-09-3P 39560-10-6P
39560-26-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 39559-78-9 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[4-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (9CI) (CA INDEX NAME)

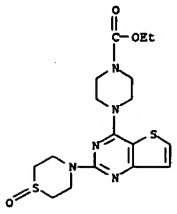


RN 39559-80-3 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[6-methyl-4-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (9CI) (CA INDEX NAME)

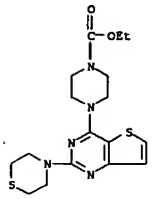


RN 39559-82-5 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[2-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

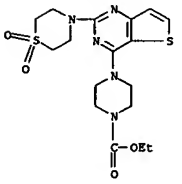


RN 39559-84-7 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[2-(4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

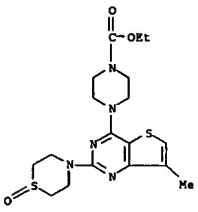


RN 39559-86-9 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[2-(1,1-dioxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

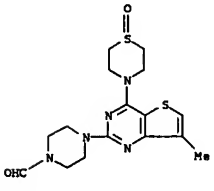
L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 39559-88-1 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[7-methyl-2-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

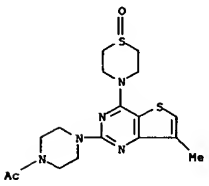


RN 39559-90-5 CAPLUS
CN 1-Piperazinecarboxaldehyde, 4-[7-methyl-4-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)

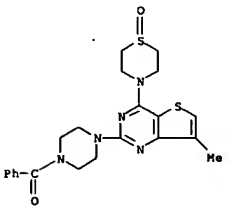


RN 39559-91-6 CAPLUS

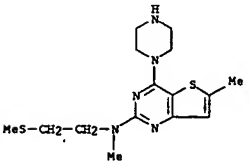
L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
CN Piperazine, 1-acetyl-4-[7-methyl-4-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)



RN 39559-92-7 CAPLUS
CN Piperazine, 1-benzoyl-4-[7-methyl-4-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)

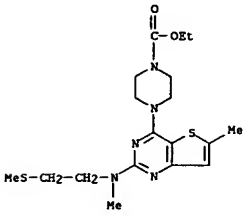


RN 39559-93-8 CAPLUS
CN Thieno[3,2-d]pyrimidin-2-amine, N,6-dimethyl-N-[2-(methylthio)ethyl]-4-(1-piperazinyl)- (9CI) (CA INDEX NAME)

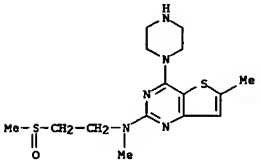


RN 39559-94-9 CAPLUS

L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
CN 1-Piperazinecarboxylic acid, 4-[6-methyl-2-[methyl[2-(methylthio)ethyl]amino]thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)



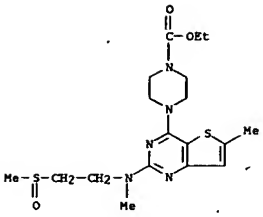
RN 39559-95-0 CAPLUS
CN Thieno[3,2-d]pyrimidin-2-amine, N,6-dimethyl-N-[2-(methylsulfinyl)ethyl]-4-(1-piperazinyl)-, dihydrochloride (9CI) (CA INDEX NAME)



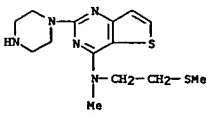
●2 HCl

RN 39559-96-1 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[6-methyl-2-[methyl[2-(methylsulfinyl)ethyl]amino]thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (9CI) (CA INDEX NAME)

L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

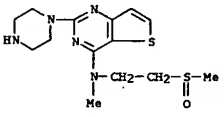


RN 39560-09-3 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-methyl-N-[2-(methylthio)ethyl]-2-(1-piperazinyl)-, dihydrochloride (9CI) (CA INDEX NAME)



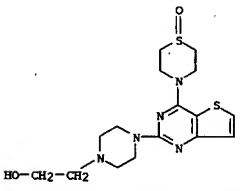
●2 HCl

RN 39560-10-6 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-amine, N-methyl-N-[2-(methylsulfinyl)ethyl]-2-(1-piperazinyl)-, dihydrochloride (9CI) (CA INDEX NAME)

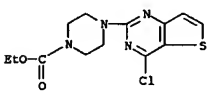


●2 HCl

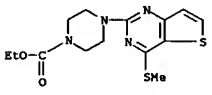
L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 39560-26-4 CAPLUS
CN 1-Piperazineethanol, 4-[4-(1-oxido-4-thiomorpholinyl)thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)



IT **33548-42-4 36926-47-3 36926-49-5**
39541-08-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with thiomorpholine 1-oxide)
RN 33548-42-4 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(4-chlorothieno[3,2-d]pyrimidin-2-yl)-, ethyl ester (8CI, 9CI) (CA INDEX NAME)

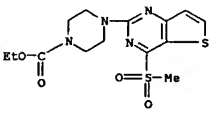


RN 36926-47-3 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[4-(methylthio)thieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (9CI) (CA INDEX NAME)

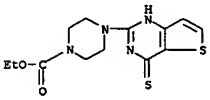


RN 36926-49-5 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[4-(methylsulfonyl)thieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (9CI) (CA INDEX NAME)

L11 ANSWER 52 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



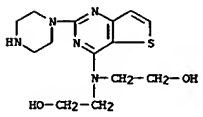
RN 39541-08-7 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(1,4-dihydro-4-thioxothieno[3,2-d]pyrimidin-2-yl)-, ethyl ester (9CI) (CA INDEX NAME)



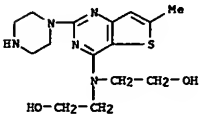
L11 ANSWER 53 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1972:488540 CAPLUS
DOCUMENT NUMBER: 77:88540
TITLE: 4-Morpholino-2-(1-piperazinyl)thieno[3,2-d]pyrimidines as inhibitors of blood platelet aggregation
INVENTOR(S): Narr, Berthold; Woitun, Eberhard; Ohnacker, Gerhard; Kadatz, Rudolf; Horch, Ulrike
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H.
SOURCE: Ger. Offen., 10 pp. Addn. to Ger. Offen. 2,003,714 (CA 75;110329v).
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
DE 2058085	A	19720531	DE 1970-2058085		19701126
US 3763156	A	19731002	US 1971-108988		19710122
RO 58118	P	19750715	RO 1971-68877		19710122
ES 387553	A1	19740116	ES 1971-387553		19710123
ES 387554	A1	19740116	ES 1971-387554		19710123
BE 762135	A1	19710727	BE 1971-99054		19710127
NL 7101043	A	19710730	NL 1971-1043		19710127
NO 129205	B	19740311	NO 1971-283		19710127
AT 301564	B	19720911	AT 1971-8811		19710128
GB 1309182	A	19730307	GB 1971-20464		19710419
PRIORITY APPLN. INFO.:			DE 1970-2003714	A	19700228
			DE 1970-2058085	A	19701126
			DE 1970-2058086	A	19701126

AB Two title compds. (I, R = H, Me), useful as inhibitors of the aggregation of blood platelets, were prepared by cyclization of 4-[bis(2-hydroxyethyl)amino]-2-(1-piperazinyl)thieno-[3,2-d]pyrimidines. Thus, 2-chloro-4-[bis(2-hydroxyethyl)-amino]thieno[3,2-d]pyrimidine and piperazine were heated 30 min at 140° to give 65.2% 4-[bis(2-hydroxyethyl)amino]-2-(1-piperazinyl)thieno[3,2-d]pyrimidine (II). II·HCl and fuming H2SO4 were kept 3 days at 20° and HCl-Et2O added to give 12% I (R = H).
IT 36926-00-8P 36926-01-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 36926-00-8 CAPLUS
CN Ethanol, 2,2'-[[2-(1-piperazinyl)thieno[3,2-d]pyrimidin-4-yl]imino]bis- (9CI) (CA INDEX NAME)



L11 ANSWER 53 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 36926-01-9 CAPLUS
CN Ethanol, 2,2'-[[6-methyl-2-(1-piperazinyl)thieno[3,2-d]pyrimidin-4-yl]imino]bis- (9CI) (CA INDEX NAME)

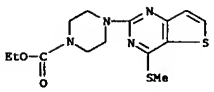


L11 ANSWER 54 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1972:488539 CAPLUS
DOCUMENT NUMBER: 77:88539
TITLE: 4-Morpholinothieno[3,2-d]pyrimidines as inhibitors of aggregation of blood platelets
INVENTOR(S): Narr, Berthold; Woitun, Eberhard; Ohnacker, Gerhard; Kadatz, Rudolf; Horch, Ulrike
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H.
SOURCE: Ger. Offen., 27 pp. Addn. to Ger. Offen. 2,003,714 (CA 75;110329v).
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

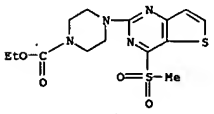
PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
DE 2058086	A	19720531	DE 1970-2058086		19701126
US 3763156	A	19731002	US 1971-108988		19710122
ES 387525	A1	19740116	ES 1971-387525		19710122
RO 58117	P	19750415	RO 1971-68876		19710122
ES 387553	A1	19740116	ES 1971-387553		19710123
ES 387554	A1	19740116	ES 1971-387554		19710123
SU 378011	D	19730417	SU 1971-1613263		19710125
SU 422160	D	19740330	SU 1971-1740387		19710125
BE 762135	A1	19710727	BE 1971-99054		19710127
NL 7101043	A	19710730	NL 1971-1043		19710127
NO 129205	B	19740311	NO 1971-283		19710127
AT 300822	B	19720810	AT 1971-705		19710128
AT 301563	B	19720911	AT 1971-8810		19710128
GB 1309182	A	19730307	GB 1971-20464		19710419
PRIORITY APPLN. INFO.:			DE 1970-2003714	A	19700228
			DE 1970-2058085	A	19701126
			DE 1970-2058086	A	19701126
			DE 1970-2059085	A	19701126

AB Thirteen title compds. (I; R = H, Me, Ph; R1, R2, R3, R4 = H, Me; n = 1, 2) and their di-HCl salts were prepared by reaction of the 2-chloro-4-morpholinothieno[3,2-d]pyrimidines with piperazines or 1,4-diazacycloheptanes or (when n = 1) by reaction of 2-[4-(ethoxycarbonyl)-1-piperazinyl]-4-chlorothieno[3,2-d]pyrimidines with morpholines followed by saponification and decarboxylation. I were used as inhibitors of the aggregation of blood platelets. Thus, Me 3-amino-4,5-dimethylthiophene-2-carboxylate was heated 2 hr with urea at 200° to give 2,4-dihydroxy-6,7-dimethylthieno[3,2-d]pyrimidine, which on refluxing 10 hr with POCl3 gave 2,4-dichloro-6,7-dimethylthieno[3,2-d]pyrimidine (II). Reaction of II with morpholine in EtOH gave 87.2% 2-chloro-6,7-dimethyl-4-morpholinothieno[3,2-d]pyrimidine, which on heating 1 hr with piperazine at 130° gave 76% I (R = R1 = Me, R2 = R3 = R4 = H, n = 1). Refluxing 2-[4-(ethoxycarbonyl)-1-piperazinyl]-4-chlorothieno[3,2-d]pyrimidine with 2-methylmorpholine 1 hr gave 67% 2-[4-(ethoxycarbonyl)-1-piperazinyl]-4-(2-methylmorpholino)thieno[3,2-d]pyrimidine, which, on refluxing 15 hr with concentrate HCl gave 74% I (R = R1 = R2 = R3 = H, R4 = Me, n = 1).
IT 36926-47-3P 36926-49-5P 36980-00-4P 36980-01-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 36926-47-3 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[4-(methylthio)thieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (9CI) (CA INDEX NAME)

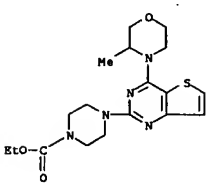
L11 ANSWER 54 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



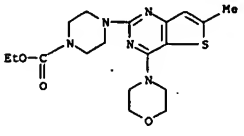
RN 36926-49-5 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[4-(methylsulfonyl)thieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (9CI) (CA INDEX NAME)



RN 36980-00-4 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[4-(3-methyl-4-morpholinyl)thieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (9CI) (CA INDEX NAME)



RN 36980-01-5 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[6-methyl-4-(4-morpholinyl)thieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (9CI) (CA INDEX NAME)



L11 ANSWER 54 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

L11 ANSWER 55 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1972:434552 CAPLUS
DOCUMENT NUMBER: 77:34552
TITLE: Microbicidal 4-amino-2-(5-nitro-2-furyl)thieno[3,2-d]pyrimidines
INVENTOR(S): Woitun, Eberhard; Reuter, Wolfgang
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H.
SOURCE: Ger. Offen., 26 pp. Addn. to Ger. Offen. 1,959,403 (CA 75:110332r).
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

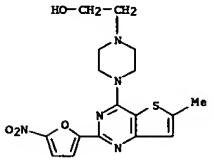
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2050816	A	19720420	DE 1970-2050816	19701016
US 3661908	A	19720509	US 1970-90841	19701118
ES 385770	A1	19731116	ES 1970-385770	19701121
ES 385771	A1	19731116	ES 1970-385771	19701121
CH 559210	A	19750228	CH 1970-17312	19701123
CH 567029	A	19750930	CH 1974-15146	19701123
CH 568324	A	19751031	CH 1974-15149	19701123
RO 56320	P	19740601	RO 1970-65079	19701124
RO 58535	P	19750915	RO 1970-67443	19701124
NL 7017210	A	19710528	NL 1970-17210	19701125
GB 1321316	A	19730627	GB 1970-56146	19701125
NO 129954	B	19740617	NO 1970-4524	19701125
DK 128781	B	19740701	DK 1970-6015	19701125
PL 85052	P	19760430	PL 1970-144640	19701125
AT 307396	B	19730525	AT 1970-10677	19701126
AT 312590	B	19740110	AT 1972-5273	19701126
IL 35729	A1	19740114	IL 1970-35729	19701126
SE 377938	B	19750804	SE 1970-16054	19701126

PRIORITY APPLN. INFO.:

DE 1969-1959403	A	19691126
DE 1970-2050814	A	19701016
DE 1970-2050815	A	19701016
DE 1970-2050816	A	19701016

GI For diagram(s), see printed CA Issue.
AB Eight title compds. I [R = (hydroxy-, alkoxy-, amino(C2-3)alkyl)-amino, or 4-(2-hydroxyethyl)-1-piperazinyl, R1 = H or Me] and (or) their HCl salts were prepared by reaction of I (R = Cl or SMe) with amines HR or by nitration of corresponding 2-furylthieno-pyrimidines. Thus, I (R = Cl, R1 = H), prepared from Et 5-nitro-2-furancarboximidate and Me 3-amino-2-thiophenecarboxylate via I (R = OH, R1 = H) and chlorination with POCl3, was treated with H2NCHMeCH2OH in Me2SO for >1 hr at 80° to give 62% I (R = NHCHMeCH2OH, R1 = H) (II). I [R = NHCH2CH(OH)CH2OH, R1 = Me] (III) had good effect against bacteria, e.g. Staphylococcus aureus SG 511, in <3 γ/ml concentration, II had good effect against Trichomonas vaginalis in <0.1 γ/ml concentration Pharmaceutical compns. containing III were reported.
IT **36991-15-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 36991-15-8 CAPLUS
CN 1-Piperazineethanol, 4-[6-methyl-2-(5-nitro-2-furanyl)thieno[3,2-

L11 ANSWER 55 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
d]pyrimidin-4-yl]- (9CI) (CA INDEX NAME)



L11 ANSWER 56 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

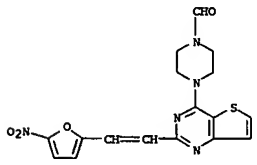
ACCESSION NUMBER: 1972:153766 CAPLUS
DOCUMENT NUMBER: 76:153766
TITLE: 2-[2-(5-Nitro-2-furyl)vinyl]thieno[3,2-d]pyrimidines
INVENTOR(S): Sauter, Robert; Maier, Roland
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H.
SOURCE: Ger. Offen., 29 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2039663	A	19720217	DE 1970-2039663	19700810

PRIORITY APPLN. INFO.:

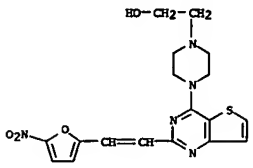
DE 1970-2039663	A	19700810

GI For diagram(s), see printed CA Issue.
AB Thirty-seven title compds. [I, R = e.g. morpholino, HOCH2CH2NH, NH2, MeNH, BuNH, HOCH2CH2NMe, Et2NCH2CH(OH)CH2NH, (HOCH2-CH2)2N, cyclohexylamino, piperazino, p-FC6H4NH, NH2NH, AcNHCH2CH2NH], useful as antibacterial agents, were prepared by reaction of I (R = Cl or MeS) with amines, by reaction of 2-methyl-4-aminothieno[3,2-d]pyrimidines with 5-nitrofurfurol (II), or by nitration of 2-[2-(2-furyl)vinyl]-4-aminothieno[3,2-d]-pyrimidines. Compns. of tablets, dragees, and capsules containing I were reported. Thus, I (R = MeS), morpholine, and Me2SO was heated 2 hr at 120° to active 45% I (R = morpholino) (III). Reaction of 2-[2-(2-furyl)vinyl]-4-morpholinothieno[3,2-d]pyrimidine in Ac2O with HNO3 gave 26% III. Heating 2-methyl-4-morpholinothieno[3,2-d]pyrimidine wih II in Ac2O 3 hr at 130° gave 28% III.
IT **36314-09-7P 36314-11-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 36314-09-7 CAPLUS
CN 1-Piperazinecarboxaldehyde, 4-[2-[2-(5-nitro-2-furanyl)ethenyl]thieno[3,2-d]pyrimidin-4-yl]- (9CI) (CA INDEX NAME)



RN 36314-11-1 CAPLUS
CN 1-Piperazineethanol, 4-[2-[2-(5-nitro-2-furanyl)ethenyl]thieno[3,2-d]pyrimidin-4-yl]- (9CI) (CA INDEX NAME)

L11 ANSWER 56 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



L11 ANSWER 57 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1971:510332 CAPLUS
DOCUMENT NUMBER: 75:110332
TITLE: Antibacterial 2-(5-nitro-2-furyl)thieno[3,2-d]pyrimidines
INVENTOR(S): Woitun, Eberhard; Reuter, Wolfgang
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H.
SOURCE: Ger. Offen., 35 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1959403	A	19710603	DE 1969-1959403	19691126
US 3661908	A	19720509	US 1970-90841	19701118
ES 385770	A1	19731116	ES 1970-385770	19701121
ES 385771	A1	19731116	ES 1970-385771	19701121
CH 558806	A	19750214	CH 1974-15147	19701123
CH 559210	A	19750228	CH 1970-17312	19701123
CH 567029	A	19750930	CH 1974-15146	19701123
CH 568324	A	19751031	CH 1974-15149	19701123
SU 403172	D	19731019	SU 1970-1494560	19701124
RO 56320	P	19740601	RO 1970-65079	19701124
RO 58535	P	19750915	RO 1970-67443	19701124
SU 539530	D	19761215	SU 1970-1494560	19701124
NL 7017210	A	19710528	NL 1970-17210	19701125
ZA 7007999	A	19710929	ZA 1970-7999	19701125
GB 1321316	A	19730627	GB 1970-56146	19701125
NO 129954	B	19740617	NO 1970-4524	19701125
DK 128781	B	19740701	DK 1970-6015	19701125
PL 85052	P	19760430	PL 1970-144640	19701125
FR 2073416	A5	19711001	FR 1970-42531	19701126
FR 2073416	B1	19750418		
AT 307396	B	19730525	AT 1970-10677	19701126
AT 312590	B	19740110	AT 1972-5273	19701126
IL 35729	A1	19740114	IL 1970-35729	19701126
SE 377938	B	19750804	SE 1970-16054	19701126

PRIORITY APPLN. INFO.:

DE 1969-1959403	A	19691126
DE 1970-2050814	A	19701016
DE 1970-2050815	A	19701016
DE 1970-2050816	A	19701016
SU 1970-1727880	A	19701124

GI For diagram(s), see printed CA Issue.

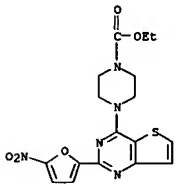
AB The title compds. (I) are prepared and are active against Staphylococcus aureus SG 511, Streptococcus aronson, Escherichia coli, and Trichomonas vaginalis. Thus, a mixture of Et 5-nitrofuran-2-iminocarboxylate and Me 3-aminothiophene-2-carboxylate is heated 1 hr at 130° to yield 65% 2-(5-nitro-2-furyl)-4-hydroxythieno[3,2-d]pyrimidine, which is converted with POCl3 into 82 4-chloro-2-(5-nitro-2-furyl)-4-thieno[3,2-d]pyrimidine (II). To a mixture of II and Me2SO is added at 80° a solution of 2-ethylaminoethanol in Me2SO and the mixture is stirred 1 hr at 80° to yield 74% 4-N-ethyl-N-[2-hydroxyethyl]amino-2-(5-nitro-2-furyl)thieno[3,2-d]pyrimidine. Some 70 other I are described together with 6 pharmaceutical prepns.

L11 ANSWER 57 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

IT **33578-81-3P 33578-82-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

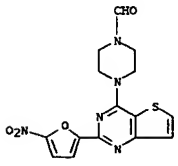
RN 33578-81-3 CAPLUS

CN 1-Piperazinecarboxylic acid, 4-[2-(5-nitro-2-furyl)thieno[3,2-d]pyrimidin-4-yl]-, ethyl ester (8CI) (CA INDEX NAME)



RN 33578-82-4 CAPLUS

CN Piperazine, 1-formyl-4-[2-(5-nitro-2-furyl)thieno[3,2-d]pyrimidin-4-yl]- (8CI) (CA INDEX NAME)



L11 ANSWER 58 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1971:510329 CAPLUS
DOCUMENT NUMBER: 75:110329
TITLE: Thrombocytes aggregation inhibiting 2-(1-piperazinyl)-4-morpholinothieno[3,2-d]pyrimidine dihydrochloride
INVENTOR(S): Woitun, Eberhard; Ohnacker, Gerhard; Narr, Berthold; Kadatz , Rudolf
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H.
SOURCE: Ger. Offen., 22 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2003714	A	19710812	DE 1970-2003714	19700128
DE 2003714	C3	19730517		
US 3763156	A	19731002	US 1971-108988	19710122
ES 387525	A1	19740116	ES 1971-387525	19710122
RO 58039	P	19750715	RO 1971-65685	19710122
ES 387553	A1	19740116	ES 1971-387553	19710123
ES 387554	A1	19740116	ES 1971-387554	19710123
SU 422160	D	19740330	SU 1971-1740387	19710125
BE 762135	A1	19710727	BE 1971-99054	19710127
NL 7101043	A	19710730	NL 1971-1043	19710127
ZA 7100523	A	19711124	ZA 1971-523	19710127
NO 129205	B	19740311	NO 1971-283	19710127
FR 2081464	A5	19711203	FR 1971-2796	19710128
FR 2081464	B1	19750418		
AT 300822	B	19720810	AT 1971-705	19710128
AT 301563	B	19720911	AT 1971-8810	19710128
GB 1309182	A	19730307	GB 1971-20464	19710419

PRIORITY APPLN. INFO.:

DE 1970-2003714	A	19700228
DE 1970-2058085	A	19701126
DE 1970-2058086	A	19701126
DE 1970-2059085	A	19701126

GI For diagram(s), see printed CA Issue.

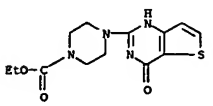
AB Title compound (I.2HCl), useful in 10-50 mg doses in for inhibition of thrombocyte-aggregation in human blood, was prepared in 19-74% yield by reaction of thienopyrimidines (II, R-Cl, MeS, R1 = morpholino; and R-4-carbethoxypiperazinyl, R1 = Cl) with piperazine or 1-substituted piperazines or morpholine, resp., at 0-200°. Thus, a mixture of Me 3-amino-2-thiophenecarboxylate and urea was heated 2 hr at 200° to give 72% 2,4-dihydroxythieno[3,2-d]pyrimidine. This was refluxed 10 hr in POCl3 to give 74% II (R = R1 = Cl). This was suspended in EtOH, morpholine added at 20°, and the mixture stirred 2 hr at room temperature to give 90% II (R = Cl, R1 = morpholino). This and 1-carbethoxypiperazine was heated 3 hr at 120° to give 86% II (R = 4-carbethoxy-1-piperazinyl, R1 = morpholino). This was refluxed 10 hr in concentrated HCl to give 63% I.

IT **33548-41-3P 33548-42-4P 33548-45-7P 33548-46-8P 33548-47-9P 33822-39-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

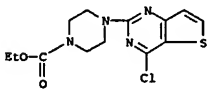
RN 33548-41-3 CAPLUS

CN 1-Piperazinecarboxylic acid, 4-[4-hydroxythieno[3,2-d]pyrimidin-2-yl]-, ethyl ester (8CI) (CA INDEX NAME)

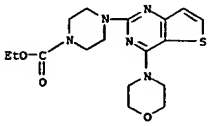
L11 ANSWER 58 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 33548-42-4 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(4-chlorothieno[3,2-d]pyrimidin-2-yl)-, ethyl ester (8CI, 9CI) (CA INDEX NAME)

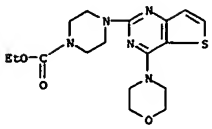


RN 33548-45-7 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(4-morpholinothieno[3,2-d]pyrimidin-2-yl)-, ethyl ester (8CI) (CA INDEX NAME)



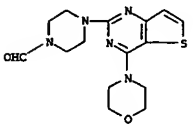
RN 33548-46-8 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-(4-morpholinothieno[3,2-d]pyrimidin-2-yl)-, ethyl ester, dihydrochloride (8CI) (CA INDEX NAME)

L11 ANSWER 58 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

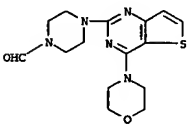


●2 HCl

RN 33548-47-9 CAPLUS
CN 1-Piperazinecarboxaldehyde, 4-[4-(4-morpholinyl)thieno[3,2-d]pyrimidin-2-yl]- (9CI) (CA INDEX NAME)



RN 33822-39-8 CAPLUS
CN 1-Piperazinecarboxaldehyde, 4-(4-morpholinothieno[3,2-d]pyrimidin-2-yl)-, dihydrochloride (8CI) (CA INDEX NAME)



●2 HCl

L11 ANSWER 59 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1968:2912 CAPLUS
DOCUMENT NUMBER: 68:2912
TITLE: Dihydrothieno[3,2-d]pyrimidines
INVENTOR(S): Ohnacker, Gerhard; Woitun, Eberhard
PATENT ASSIGNEE(S): Boehringer Ingelheim G.m.b.H.
SOURCE: U.S., 11 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3318881		19670509		
PRIORITY APPLN. INFO.:			DE	19620704

GI For diagram(s), see printed CA Issue.

AB The title compds. (I) were prepared by 2 methods. Thus, 8 g. Me 3-oxotetrahydro-2-thiophenecarboxylate was added dropwise with stirring at 20° to 18.6 g. EtSC(:NH)NH2.HBr and 13.8 g. K2CO3 in 50 ml. H2O and the mixture stirred 15 hrs. at 20° to give 70% I (R = EtS, R1 = OH, m = 0) (II), m. 242-3°. [Unless otherwise shown, all compds. were recrystd. from EtOH]. Similarly prepared were the following substituted I (R1 = OH) [R, R2, and m.p. given]: EtS, 7-Me, 182-3°; pyrrolidino, 7-Me, 270-2°; Me2N, H, 294-5° [HCONMe2(DMF)]; EtS, 6-Me, 210-11°; EtS, 6-Ph, 228-9°; EtS, 7-Ph, 226-8°; Ph, H, 255-6° (DMF-EtOH). A mixture of 7.5 g. II and 50 ml. morpholine was refluxed with stirring 24 hrs. on a 140° oil bath, cooled, and poured into 150 ml. Et2O to give 67% I (R = morpholino, R1 = OH, m = 0) (III), m. 262-5° (DMF). Similarly prepared were the following I (R1 = OH) [R, R2, and m.p. given]: morpholino, 7-Me, 234-5° [DMF]; 2-methylmorpholino, H, 271-3° (DMF). A mixture of 3 g. III and 20 ml. POCl3 was refluxed 2 hrs. to give I (R = morpholino, R1 = Cl, m = 0) (IV), m. 145-6°. Similarly prepared were the following I (R1 = Cl) [R, R2, and m.p. given]: morpholino, 7-Me (V), 78-80°; pyrrolidino, 7-Me (VI), 63-4°; Me2N, 7-Me, 38° (MeOH); morpholino, 6-Ph, 147-8°; morpholino, 7-Ph, 149-50°; 4-methyl-1-piperazinyl, H, 78-9° (petr. ether); EtS, H (VII), 75-6°; 2-methylmorpholino, H, 101-2°; pyrrolidino, H, 102-3°; Me2N, H, 98-9°; EtNH, H, 124-5°; iso-PrNH, H, 40-1° (petr. ether); piperidino, H, 108-9°; morpholino, 6-Me, 77-9°; Ph, H (VIII), 149-50°. A mixture of 5.14 g. IV and 30 ml. morpholine was refluxed 4 hrs. on a 150° oil bath to give 68% I (R = R1 = morpholino, m = 0) (IX), m. 127-8°. Similarly, the following I were prepared [R, R1, R2, % yield, and m.p. given]: morpholino, morpholino, 7-Me, 35, 125-6°; pyrrolidino, morpholino, H, 64, 136-7°; 2-methylmorpholino, morpholino, H, 67, 118-19°; Me2N, morpholino, H, 70, 111-12°; Me2N, pyrrolidino, H, 68, 125-6°; morpholino, morpholino, 6-Me, 70, 137-8°; morpholino, morpholino, 7-Ph, 93, 180-1° (MeOH). A mixture of 5.43 g. V and 50 ml. PhCH2NH2 was heated 5 hrs. on a 150° oil bath to give 63% I (R = morpholino, R1 = PhCH2NH, R2 = 7-Me), m. 132-4°. Similarly prepared were the following I [R, R1, R2, % yield, and m.p. given]: morpholino, allylamino, 7-Me, 46, 98-9°; morpholino, 2-methylmorpholino, H, 51, 87-8° (MeOH); morpholino, piperidino, H, 45, 108-9°; morpholino, 4-methyl-1-piperazinyl, H, 40, 103-4° (gasoline); morpholino, cyclohexylamino, H, 65, 134-5°; morpholino, anilino, H, 52, 166-7°; morpholino, PhCH2NH, H, 61, 138-9°; morpholino, benzylethylamino, H, 48, 92-3°; morpholino, PrNH, H, 73, 104-5° (MeOH); morpholino, BuNH, H, 68, 84-5° (MeOH);

L11 ANSWER 59 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

morpholino, pentylamino, H, 61, 94-5° (gasoline); morpholino, iso-BuNH, H, 82, 122-3° (gasoline); morpholino, diethanolamino, H, 55, 142-3° (MeOH); morpholino, ethanolamino, H, 59, 112-13° (MeOH); morpholino, methylethanolamino, H, 58, 130-1° (MeOH); pyrrolidino, 2-methylmorpholino, H (X), 48, 70-1° (gasoline); 2-methylmorpholino, 2-methylmorpholino, H, 62, 103-4° (MeOH); 2-methylmorpholino, diethanolamino, H, 48, 133-4° (MeOH); Me2N, 4-methyl-1-piperazinyl, H, 62, 54-5° (gasoline); Me2N, morpholino, 7-Me, 61, 81-2° (MeOH); EtNH, morpholino, H, 51, 104-5°; EtNH, benzylethylamino, H, 47, 89-90° (MeOH); EtNH, ethylmethylamino, H, 56, 104-5° (MeOH); iso-PrNH, morpholino, H, 46, 90-1° (MeOH); iso-PrNH, pyrrolidino, H, 40, 110-11° (MeOH); iso-PrNH, methylethanolamino, H, 34, 114-15° (Me2CO); piperidino, diethanolamino, H, 45, 117-18° (EtOAc); piperidino, methylethanolamino, H, 53, 76-7° (EtOAc); piperidino, pyrrolidino, H, 54, 91-2° (MeOH); morpholino, ethylethanolamino, H, 72, 129-30° (MeOH); morpholino, pyrrolidino, H, 65, 169-70°; morpholino, γ-methoxypropylamino, H, 61, 79-80° (gasoline); piperidino, morpholino, H, 72, 97-8° (MeOH); 4-methyl-1-piperazinyl, morpholino, H, 54, 98-9° (hexane); 4-methyl-1-piperazinyl, methylethanolamino, H, 67, 119-20° (EtOAc); Me2N, 2-methylmorpholino, H, 56, 64-5° (MeOH); Me2N, diethanolamino, H, 56, 128-9° (EtOAc); Me2N, methylethanolamino, H, 57, 86-7° (Me2CO); morpholino, pyrrolidino, 6-Ph, 75, 112-13° (MeOH). A mixt. of 5.43 g. V and 60 ml. liq. NH3 was heated 5 hrs. in an autoclave on a 120° oil bath to give 51% I (R = morpholino, R1 = NH2, R2 = 7-Me), m. 117-18°. Similarly prepd. were the following I [R, R1, R2, % yield, and m.p. given]: morpholino, Et2N, 7-Me, 42, 50-1° (hexane); morpholino, NH2, H, 46, 165-7°; morpholino, MeNH, H, 42, 156-7° (MeOH); morpholino, EtNH, H, 64, 124-5° (MeOH); morpholino, allylamino, H, 55, 107-8° (MeOH); morpholino, iso-PrNH, H, 75, 116-17° (gasoline); morpholino, Me2N, H, 68, 121-2° (MeOH); morpholino, Et2N, H, 41, 44-5° (gasoline); morpholino, Pr2N, H, 51, 69-70° (MeOH); morpholino, Bu2N, H, 54, 45-6° (MeOH); morpholino, diallylamino, H, 39, 58-9° (petr. ether); pyrrolidino, iso-PrNH, H, 61, 101-2° (petr. ether); 2-methylmorpholino, NH2, H, 60, 165-6°; 2-methylmorpholino, EtNH, H, 55, 108-9°; 2-methylmorpholino, allylamino, H, 65, 85-6° (gasoline); Me2N, NH2, H, 55, 171-2° (MeOH); Me2N, EtNH, H, 43, 101-2° (MeOH); Me2N, iso-PrNH, H, 38, 86-7° (gasoline); Me2N, Me2N, H, 46, 105-6° (gasoline); Me2N, NH2, 7-Me, 35, 123-4°; Me2N, Me2N, 7-Me, 53, 78-9°; EtNH, EtNH, H, 63, 116-17° (MeOH); 4-methyl-1-piperazinyl, PrNH, H, 58, 108-9° (gasoline); 4-methyl-1-piperazinyl, allylamino, H, 42, 84-5° (petr. ether); 4-methyl-1-piperazinyl, iso-PrNH, H, 48, 80-1° (hexane); 4-methyl-1-piperazinyl, Me2N, H, 51, 76-7° (gasoline); Me2N, allylamino, H, 72, 86-7° (petr. ether); morpholino, Me2N, 6-Me, 62, 75-6° (petr. ether); morpholino, PrNH, 6-Me, 71, 76-7° (petr. ether); morpholino, iso-PrNH, 6-Ph, 69, 151-2°; morpholino, Et2N, 7-Ph, 46, 97-8°. Ethereal HCl was added to a soln. of 1.6 g. 7-Me deriv. (XI) of X in 50 ml. abs. EtOAc until the soln. was acid to Congo red to give 73% HCl salt of XI, m. 195-7°. Similarly, the salts of the following I were prepd. [R, R1, R2, salt, and m.p. given]: morpholino, dimethylaminopropylamino, H, tri-HCl, 147-9° (MeOH); piperidino, Et2N, H, HCl, 141-2° (EtOAc); and 4-methyl-1-piperazinyl, EtNH, H, di-HCl, 288-9°. Hydrazine hydrate (50 ml. of 80%) was added to a soln. of 3.2 g. VI in 50 ml. EtOH, the mixt. refluxed 4 hrs., and cooled to give 76% I (R = pyrrolidino, R1 = hydrazino, R2 = 7-Me), m. 148-9°. Similarly prepd. was I (R = morpholino, R1 =

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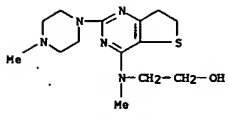
hydrazino, m = 0), m. 166-7°. The addn. of 5.43 g. V to a soln. of 0.5 g. Na in 50 ml. iso-PrOH, followed by 3 hrs. reflux gave on cooling 58% I (R = morpholino, R1 = iso-PrO, R2 = 7-Me), m. 79-80° (iso-PrOH). Similarly prepd. were the following I [R, R1, R2, % yield, and m.p. given]: Me2N, EtO, 7-Me, 40, 39-40° (petr. ether); morpholino, MeO, H, 57, 134-5°; morpholino, EtO, H, 54, 92-3°; morpholino, allyloxy, H, 52, 101-2°; morpholino, iso-PrO, H, 63, 80-1° (MeOH); 2-methylmorpholino, EtO, H, 62, 68-9° (MeOH); pyrrolidino, EtO, H, 73, 86-7°; Me2N, MeO, H, 44, 71-2° (MeOH); morpholino, PrO, H, 56, 83-4° (MeOH); morpholino, BuO, H, 73, 69-70° (MeOH); morpholino, iso-BuO, H, 48, 89-90° (MeOH); morpholino, isoamyloxy, H, 44, 77-8° (MeOH); morpholino, EtOCH2CH2O, H, 38, 82-3° (gasoline); Me2N, EtO, H, 46, 63-4° (hexane); morpholino, EtO, 6-Ph, 32, 220° (EtOAc). Maleic acid (1.16 g.) was added to a soln. of 3.08 g. IX in 75 ml. abs. EtOH and the mixt. evapd. to dryness to give 75% of the maleate salt of IX, m. 134-5° (iso-PrOH). A mixt. of 4.3 g. II and 60 ml. pyrrolidine was heated 20 hrs. in a closed vessel on a 140° oil bath, cooled, poured into water, and acidified to give I (R = pyrrolidino, R1 = OH, m = 0), m. 310-11° (DMF), in 76% yield. Similarly prepd. were the following I (R1 = OH) [R, R2, and m.p. given]: EtNH, H, 295-6° (DMF); iso-PrNH, H, 280-1°; Me2N, 7-Me, 250-1° (DMF); and piperidino, H, 268-9° (DMF). A mixt. of 4.28 g. II and 29 g. morpholine acetate was heated 1 hr. on a 180° oil bath and poured into water to give 85% III. Similarly prepd. were the following I (R1 = OH) [R, R2, and m.p. given]: morpholino, 6-Me, 241-3°; morpholino, 6-Ph, 245-9°; morpholino, 7-Ph, 251-3°; 4-methyl-1-piperazinyl, H, 258-9° (DMF-EtOH). Refluxing VII with BuNH2 3 hrs. followed by treating the product with ethereal HCl gave 72% of the HCl salt of I (R = EtS, R1 = BuNH, m = 0), m. 260-2°. VII with NaOEt gave I (R = EtS, R1 = EtO, m = 0), m. 62-3° (petr. ether). Heating VIII with morpholine gave 71% I (R = Ph, R1 = morpholino, m = 0), m. 108-9°. The I have cardiovascular and sedative activities.

IT 4856-58-0P 4901-01-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 4856-58-0 CAPLUS

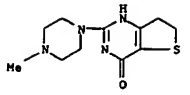
CN Ethanol, 2-[[6,7-dihydro-2-(4-methyl-1-piperazinyl)thieno[3,2-d]pyrimidin-4-yl]methylamino]- (7CI, 8CI) (CA INDEX NAME)



RN 4901-01-3 CAPLUS

CN Thieno[3,2-d]pyrimidin-4-ol, 6,7-dihydro-2-(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

L11 ANSWER 59 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



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ACCESSION NUMBER: 1967:500149 CAPLUS
DOCUMENT NUMBER: 67:100149
TITLE: Thienopyrimidines
INVENTOR(S): Thomae, Dr. Karl
PATENT ASSIGNEE(S): Thomae, Dr. Karl, G.m.b.H
SOURCE: Brit., 21 pp.
CODEN: BRXXAA
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1057612		19670201		
DE 1470356			DE	
FR 1603313			FR	
FR 4321			FR	
US 3475429		19690000	US	
PRIORITY APPLN. INFO.:			DE	19640115

GI For diagram(s), see printed CA Issue.

AB The title compounds are thieno[3,2-d]pyrimidines of general formulas I-IV. The compds. have cardiovascular, central-stimulating, diuretic, analgesic, sedative, antirheumatic, antiphlogistic, cytostatic, bacteriostatic and fungistatic actions, depending on the nature of R1 and R2. The cardiovascular activity is especially marked when R1 or R2 is an N-methylpiperazino group. Compds. having R1 = alkoxy have especially good sedative action. The compds. may be administered orally, rectally, or parenterally. Thus, 0.025 mole 2-(methoxycarbonyl)-3-aminothiophene (V) is heated to 200° for 1 hr. in 0.25 mole HCONH2 to give 68% I (R1 = H; R2 = OH), m. 218-20° (EtOH). Similarly urea gives 72% I (R1 = R2 = OH), m. >300° (H2O). V (0.09 mole) and 0.3 mole PhCH2CN are added over 2 hrs. to 0.18 g. atom Na in boiling PhMe-C6H6 1:2 at 85-90°. The mixture is refluxed 8 hrs., 60 ml. absolute EtOH added, and the mixture concentrated The residue is dissolved in 300 ml. N NaOH, washed with PhMe, and acidified to pH 5-6 with 2N HCl to give 34% I (R1 = PhCH2; R2 = OH), m. <300° (HCONMe2). KCNO (0.2 mole) in 25 ml. H2O is added slowly to 0.1 mole V in 250 ml. HOAc at 15-20°. After 5 hrs., crystals are filtered off and dissolved in 250 ml. 2N NaOH. Acidification gives III (R1 = OH; R4 = H) m. >300°. Similarly KCNS and V give III (R1 = SH; R4 = H) m. >300° (HCONMe2). Similarly 0.05 mole V and 0.2 mole PhNCO are refluxed in 150 ml. absolute PhMe for 8 hrs. with 2 ml. Et3N to give 63% III (R1 = OH; R4 = Ph), m. <300°. 2-Carboxy-3-acetamidothiophene (0.03 mole) and 0.05 mole o-MeC6H4NH2 are refluxed 3 hrs. in 250 ml. PhMe. PCl3 (0.02 mole) is added dropwise and the mixture refluxed 3 hrs., cooled, washed with 100 ml. 10% NaOH, washed, neutralized with H2O, and dried over Na2SO4. PhMe is distilled to give 57% III (R1 = Me; R4 = o-tolyl), m. 128-9° (EtOAc). Similarly p-ClC6H4NH2 gives III (R1 = Me; R4 = p-ClC6H4), m. 223-5° (EtOAc). I (R1 = H; R2 = OH) upon heating with POCl3 gives 63% I (R1 = H; R2 = Cl), m. 125-6° (C6H6) and I (R1 = R2 = OH) gives I (R1 = R2 = Cl), m. 141-2° (EtOH). I (R1 = R2 = Cl) (0.025 mole) in 200 ml. absolute EtOH reacts with 0.055 mole morpholine at 20° to give I [R1 = Cl, R2 = morpholino (A)] and morpholine-HCl. The following I (R1 = Cl) are prepared similarly R2, m.p. and recrystn. solvent given): 2-methylmorpholino (B), 169-71°, EtOH; piperidino (I), 130-1°, MeOH; pyrrolidino (C), 179-80°, EtOH; BuNH, 94-5°, MeOH-H2O 1:1; iso-PrNH, 140-2°, EtOH; Me2N, 166-8°, EtOH; HOCH2CH2NH (D), 206-7°, EtOH; (HOCH2CH2)2N (E), 144-5°, EtOH; HOCH2CH2NMe (F), 179-8°, EtOH; PhCH2CH2NH (H), 128-9°, MeOH, H3N, 273-5°, EtOH; ethylenimino, 118°, MeOH;HN:C(NH2)NH 256-8°, BuOH I (R1 = R2 = Cl) (0.022 mole) in abs. 80 ml. EtOH is treated with 0.022 g. atom Na in 30 ml. abs. EtOH at 25° to give 95% I (R1 = Cl; R2 = OEt), m. 137-8° (EtOH). I (R1 = R2 = Cl) (0.02 mole) is dissolved in 20 ml. morpholine and crystals of I (R1 = Cl; R2 = morpholino) form. The mixt. is refluxed 1 hr. and poured into water to give 70% I (R1 = R2 = morpholino), m. 145-7° (EtOH). I (R1 = Cl, R2 = piperidino) (0.0125 mole) and 10 ml. (HOC2H4)2NH are heated to 150° for 4 hrs. The mixt. is poured into water to give 75% I [(R1 = (HOC2H4)2N; R2 = I], m. 83-4° (70% MeOH). Similarly prepd. are the following I (R1, R2, m.p., and recrystn. solvent given): H, A, 136-8°, MeOH; H, B, 118-20°, EtOH; H, C, 143-4°, MeOH; H, PrNH, 85-6°, Me2CO; H, iso-PrNH, 202-4°, EtOH; H, CH2:CHCH2NH, 116-18°, Me2CO; H, Et2N, 95-6°, Me2CO; H, D, 149-50°, EtOH; H, E, 164-5°, EtOH; H, F, 148-9°, EtOH; H, cyclohexylamino, 178-9°, EtOH; H, PhCH2NH (G), 154-5°, EtOH; H, H, 205-6°, MeCOEt; B, B, 86-7°, hexane; C, C, 161-2°, EtOH; D, D, 144-6°, MeOH; G, G, 150-1°, EtOH; H, H, 65-6°, EtOH; A, B, 103-4°, EtOH; A, C, 174-6°, EtOH; A, BuNH, 118-19°, MeOH; A, iso-PrNH, 156-7°, MeOH; A, Me2N, 122-3°, MeOH; A, D, 145-7°, MeOH; A, E, 130-1°, MeOH; A, F, 126-7°, MeOH; A, H, 174-5°, EtOH; B, A, 109-10°, MeOH; B, A, 161-3°, MeOH; I, E, 85-6°, 70% MeOH; I, F, 93-4°, Et2O; C, A, 118-19°, EtOH; C, Me2N, 141-2°, MeOH; F, I, 74-5°, Et2O; H2N, H2N, 196-8°, Me2CO; PrNH, PrNH, 76-8°, petroleum ether; iso-PrNH, iso-PrNH, 87-9°, hexane; β-morpholinoethylamino (J), H2N, 207-8°, MeOH; A, H2N, 183-4°, EtOH; A, ethylenimino, 163-4°, MeOH; J, C, 133-4°, Me2CO; I, A, 108-9° MeOH; I, iso-PrNH, 101-3°, EtOH; 4-methyl-1-piperazinyl (K), A, 120-1°, Et2O; K, C, 175-6°, Me2CO; K, H2N, 194-5°, Me2CO; K, BuNH, 92-4°, hexane; K, EtNH, 100-2°, Et2O; K, PrNH, 113-14°, hexane; K, CH2:CHCH2NH, 105-6°, hexane; K, iso-BuNH, 133-4°, hexane; K, iso-pentyl-NH (L), 124-5°, hexane; C, H2N, 250-2°, EtOH; cyclohexylamino, A, 82-3°, Me2CO; PhNH, A, 180-1°, EtOH; G, A, 142-3°, EtOH; H, A, 98-9°, Me2CO; EtNH, C, 173-4°, EtOH; PrNH, A, 106-7°, Et2O; PrNH, C, 131-2°, Me2CO; PrNH, iso-PrNH, 108-10°, petroleum ether; BuNH, A, 112-14°, MeOH; BuNH, C, 124-5°, Me2CO; BuNH, H2N, 101-3°, benzene; iso-PrNH, A, 131-3°, Et2O; iso-PrNH, C, 123-4°, EtOH; iso-PrNH, H2N, 138-9°, benzene; iso-BuNH, A, 93-4°, Et2O; iso-BuNH, C, 133-4°, Me2CO; iso-BuNH, H2N, 132-4°, benzene; L, A, 89-90°, Et2O; L, C, 117-19°, Me2CO; L, H2N, 109-11°, Me2CO; CH2:CHCH2NH, iso-PrNH, 103-5°, hexane; (CH2:CHCH2)2N, C, 92-4°, EtOAc; Me2N, A, 103-4°, Et2O; Me2N, C, 171-2°, Me2CO; Me2N, H2N, 174-5°, MeOH; Et2N, A, 62-3°, EtOH; Et2N, C, 105-7°, MeOH; Et2N, iso-PrNH, 110-11°, petroleum ether; Et2N, D, 99-100°, MeOH; D, A, 122-3°, Me2CO; E, A, 118-19°, MeOH; E, C, 141-2°, Me2CO; E, iso-PrNH, 97-9°, MeOH; F, A, 90-2°, Et2O-MeOH; F, C, 101-2°, EtOAc; F, iso-PrNH, 99-100°, Me2CO; H2NNH, A, 163-4°, EtOH; Me2NCH2CH2NH, H2N, 167-8°, Me2CO; MeO(CH2)3NH, A, 84-5°, Et2O; K, iso-PrNH, 105-6°, hexane. I (R1 = R2 = Cl) (0.02 mole) in 100 ml. abs. EtOH is mixed with 0.044 g. atom Na in 50 ml. abs. EtOH at 50° and then refluxed 1 hr., NaCl is filtered off and the soln. concd. to give 83% I (R1 = R2 = OEt), m. 107-8° (EtOH). Similarly prepd. are the following I, (R1, R2, m.p. and recrystn.

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L11 ANSWER 60 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

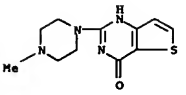
solvent given): H, MeO, 105-6°, MeOH; H, EtO, 96-7°, EtOH; H, iso-PrO 69-70°, MeOH, MeO, MeO, 120-1°, MeOH; Me2CHO, iso-PrO, 62-3°, Me2CO; BuO, BuO, 47-9°, MeOH. I (R1 = Cl; R2 = B) (0.02 mole) and 0.03 g. atom Na in 150 ml. abs. EtOH are refluxed 8 hrs. The soln. is evapd. and the solid washed with H2O to give 57% I (R1 = OEt; R2 = B), m. 100-1° (70% aq. EtOH). Similarly prepd. are the following I (R1, R2, m.p., and recrystn. solvent given): MeO, A, 126-8°, MeOH; MeO, B, 82-4°, petroleum ether; MeO, C, 147-9°, Me2CO; MeO, H2N, 219-21°, EtOH; EtO, A, 109-11°, EtOH; EtO, C, 145-6°, Me2CO; EtO, H2N, 160-2°, Me2CO; PrO, H2N, 131-3°, MeOH; BuO, B, 42-4°, petroleum ether; CH2:CHCH2O, iso-PrNH, 105-6°, petroleum ether; Me2CHO, A, 102-4°, Et2O; Me2CHO, C, 141-2°, Me2CO; Me2CHO, iso-PrNH, 141-2°, petroleum ether; PhO, A, 140-2°, MeOH; PhCH2O, A, 75-6°, MeOH; EtOCH2CH2O, A, 80-1°, MeOH; Me2NCH2CH2O A, 73-4°, petrol. I (R1 = Cl; R2 = OEt) reacts with excess morpholine or HOCH2CH2NHMe at 100° 4 hrs. to give 74% I (R1 = A; R2 = OEt), m. 105-6° (MeOH) and I (R1 = HOCH2CH2NMe; R2 = OEt), m. 85-6° (ether). II (R3 = R4 = H) is methylated with Me2SO4 to give 87% II (R3 = R4 = Me), m. 186-7° (EtOH). I (R1 = H; R2 = OH) reacts with P2S5 in pyridine to give 74% I (R1 = H; R2 = SH), m. >300° (HCONMe2). This reacts with MeI to give 53% I (R1 = H; R2 = SMe), m. 110-11 (EtOH). I (R1 = H; R2 = Cl) reacts with 80% N2H4.H2O to give 70% I (R1 = H; R2 = N2H3), m. 246-8° (decompn.) (EtOH). Basic products may be converted to their salts. Thus, hydrochlorides are prepd. by treatment of ethereal solns. with HCl in abs. ether to give the following I.HCl salts (R1, R1, m.p., and recrystn solvent given): H, K, 250-2°, EtOH, H, ethylenimino, 256-7°, EtOH; K, Et2O, 289-90°, EtOH; EtNH, EtNH, 228-30° EtOH-EtOAc; L, L, 177-8°, Me2CO; CH2:-CHCH2)2N (M), M, 118-20°, EtOAc; PrNH, PhCH2CH2NH, 186-8°, EtOH-EtOAc; C5H11NH, A, 185-7°, MeCOEt; M, A, 173-4, EtOH-EtOAc; Me2NCH2CH2NH, A, 268-70°, BuOH; Me2NCH2CH2NH, iso-PrNH, 115-18°, EtOH-EtOAc; J, A, 275-7°, EtOH; J, iso-PrNH, 283-5°, EtOH; MeN(CH2)3NH, A, 235-7°, MeOH-EtOAc; K, B, 260-1°, EtOH-EtOAc; K, I, 280° (decompn.) EtOH; PrNH, B, 205-7°, MeCOEt; L, B, 184-6°, MeCOEt; Et2NCH2CH2NH, A, 234-6°, BuOH; K, iso-PrNH 285° (decompn.), EtOH. I (R1 = SH; R2 = OH) treated with excess EtBr gives 77% I (R1 = SEt; R2 = OH), m. 201-3° (EtOH), which on heating with excess morpholine under pressure at 160° gives 87% I (R1 = A, R2 = OH), m. 256-8° (HCONMe2). Similarly prepd. is I (R1 = K, R2 = OH), m. 225-6° (EtOH). These compds. are treated with POCl3 to give 78% I (R1 = A, R2 = Cl), m. 105° (ether), and I (R1 = K, R2 = Cl), m. 87-9° (petroleum ether). I (R1 = Cl, R2 = A) (0.02 mole) and 0.05 mole thiourea in abs. 300 ml. EtOH is refluxed for 15 hrs. to give 68% I (R1 = SH, R2 = A), m. 267-9° (HCONMe2). Six formulations using claimed compds. are given.

IT **16233-55-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 16233-55-9 CAPLUS

CN Thieno[3,2-d]pyrimidin-4-ol, 2-(4-methyl-1-piperazinyl)- (8CI) (CA INDEX NAME)

L11 ANSWER 60 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



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ACCESSION NUMBER: 1967:432668 CAPLUS
DOCUMENT NUMBER: 67:32668
TITLE: 4-Aminothionaphtheno[3,2-d]pyrimidine derivatives
AUTHOR(S): Travin, A. I.; Magidson, O. Yu.
CORPORATE SOURCE: S. Ordzhonikidze Vses. Nauch.-Issled. Khim.-Farmatsevt. Inst., Moscow, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1967), (1), 77-9
CODEN: KGSSAQ; ISSN: 0132-6244
DOCUMENT TYPE: Journal
LANGUAGE: Russian

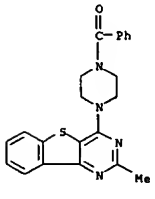
GI For diagram(s), see printed CA Issue.

AB 2-Methyl-4-oxo-3,4-dihydrothionaphtheno[3,2-d]pyrimidine, refluxed in POCl3, gave 56% 2-methyl-4-chlorothionaphtheno[3,2-d]pyrimidine (I), m. 173-5°. I was treated in EtOH with: (a) EtONa; (b) piperidine; (c) 4-benzoylpiperazine; (d) N-methylpiperazine and Et3N; (e) Et2NCH2CH2NH2; (f) Et2NCH2CH(OH)CH2NH2; to give, resp.: 2-methyl-4-ethoxythionaphtheno[3,2-d]pyrimidine in 43% yield, m. 112-14°, 2-methyl-(N-piperidino)thionaphtheno[3,2-d]pyrimidine-0.5 H2O in 70% yield, m. 113-14°; 2-methyl-4-(4-benzoylpiperazino)thionaphtheno[3,2-d]pyrimidine (II) in 90% yield, m. 146-9°; 2-methyl-4-(4-methylpiperazino)thionaphtheno[3,2-d]pyrimidine-H2O, m. 111-12°; 2-methyl-4-[2-(diethylamino)ethylamino]thionaphtheno[3,2-d]pyrimidine, m. 112-14°; 2-methyl-4-[3-(diethylamino)-2-hydroxypropylamino]thionaphtheno[3,2-d]pyrimidine, m. 113-16°. II, refluxed 4.5 hrs. in 2N HCl, gave 57% 2-methyl-4-(N-piperazino)thionaphtheno[3,2-d]pyrimidine-2HCl.2H2O (III), m. 253-6° (decomposition); free base of III m. 138-41°; III picrate m. 258-60° (decomposition).

IT **16290-78-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 16290-78-1 CAPLUS

CN Piperazine, 1-benzoyl-4-(2-methyl-[1]benzothieno[3,2-d]pyrimidin-4-yl)- (8CI) (CA INDEX NAME)



L11 ANSWER 62 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1966:104295 CAPLUS
DOCUMENT NUMBER: 64:104295
ORIGINAL REFERENCE NO.: 64:19639f-h,19640a-h,19641a
TITLE: Basic tri-substituted pyrimido[4,5-d]pyrimidines
INVENTOR(S): Ohnacker, Gerhard; Woitun, Eberhard
PATENT ASSIGNEE(S): Boehringer Ingelheim G.m.b.H.
SOURCE: 17 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3242173		19660322	US	19610209

GI For diagram(s), see printed CA Issue.

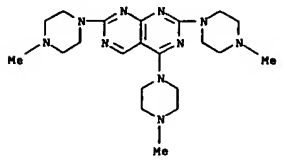
AB Title compds. of type (I) [where R1, R2 and R3 are various heterocyclic, alkyl, alkenyl, alkoxyamino, and hydrazino groups], and their nontoxic salts were prepared and found to have coronary dilating and sedative properties in doses of 150-600 mg. daily. Synthesis was accomplished by treating compds. of type I (wherein R1, R2, and R3 were either one, two or all 3 halogens, quaternary ammonium, mercapto, alkylthio groups; R3 could also be hydroxy, lower alkoxy, alkenyloxy, cyclohexyloxy or alkylamino groups) with 1-3 moles of the desired amine or N2H4 at 20-200° in the usual inert solvents or excess amine. Accelerators such as Cu and its salts, alkali metal iodides, and acid amine salts were used. Thus, 1.2 g. 2,7-bis(ethylthio)-4-hydroxy[4,5-d]pyrimidine dissolved in 4 ml. morpholine was heated 2 hrs. on an oil bath at 130°. The precipitated product was washed with EtOH and repptd. from N NaOH with N HCl yielding 88% 2,7-dimorpholino-4-hydroxypyrimido-[4,5-d]pyrimidine, m. >340° (HCONMe2). Also prepared by analogous methods were compds. of the general formula I. Formulations of several of the above compds. into injectable, drop, tablet, capsule, pill, and suppository dosage forms are given.

IT **5681-58-3**, Pyrimido[4,5-d]pyrimidine, 2,4,7-tris(4-methyl-1-piperazinyl)- **5681-59-4**, Pyrimido[4,5-d]pyrimidine, 4-(butylamino)-2,7-bis(4-methyl-1-piperazinyl)- **5681-60-7**, Pyrimido[4,5-d]pyrimidine, 4-(dimethylamino)-2,7-bis(4-methyl-1-piperazinyl)- **5681-61-8**, Pyrimido[4,5-d]pyrimidine, 4-(diethylamino)-2,7-bis(4-methyl-1-piperazinyl)- **5724-35-6**, Pyrimido[4,5-d]pyrimidine, 4-(benzylamino)-2,7-bis(4-methyl-1-piperazinyl)- **5724-36-7**, Pyrimido[4,5-d]pyrimidine, 2,7-bis(4-methyl-1-piperazinyl)-4-(propylamino)- **5724-37-8**, Pyrimido[4,5-d]pyrimidine, 4-(isobutylamino)-2,7-bis(4-methyl-1-piperazinyl)- **5724-38-9**, Pyrimido[4,5-d]pyrimidine, 2,7-bis(4-methyl-1-piperazinyl)-4-(1-pyrrolidinyl)- **5726-71-6**, Pyrimido[4,5-d]pyrimidin-4-ol, 2,7-bis(4-methyl-1-piperazinyl)- **5726-84-1**, Pyrimido[4,5-d]pyrimidine, 4-(4-methyl-1-piperazinyl)-2,7-dimorpholino- **5730-68-7**, Pyrimido[4,5-d]pyrimidine, 4-isopropoxy-2,7-bis(4-methyl-1-piperazinyl)- **5730-69-8**, Pyrimido[4,5-d]pyrimidine, 4-isobutoxy-2,7-bis(4-methyl-1-piperazinyl)- **5933-70-0**, Pyrimido[4,5-d]pyrimidine, 2,7-bis(4-methyl-1-piperazinyl)-4-morpholino- **6079-10-1**, Pyrimido[4,5-d]pyrimidine, 4-ethoxy-2,7-bis(4-methyl-1-piperazinyl)-
(preparation of)

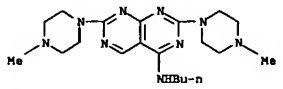
RN 5681-58-3 CAPLUS

CN Pyrimido[4,5-d]pyrimidine, 2,4,7-tris(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

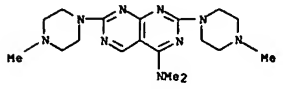
L11 ANSWER 62 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



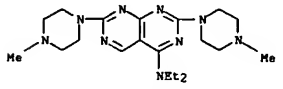
RN 5681-59-4 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-(butylamino)-2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)



RN 5681-60-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-(dimethylamino)-2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

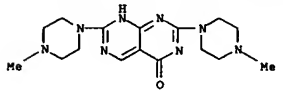


RN 5681-61-8 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-(diethylamino)-2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

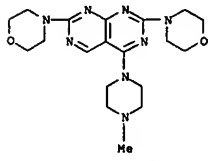


RN 5724-35-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-(benzylamino)-2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

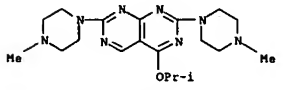
L11 ANSWER 62 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



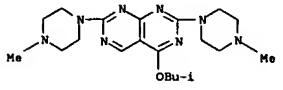
RN 5726-84-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-(4-methyl-1-piperazinyl)-2,7-dimorpholino- (7CI, 8CI) (CA INDEX NAME)



RN 5730-68-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-isopropoxy-2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

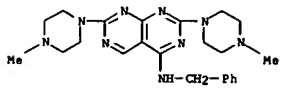


RN 5730-69-8 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-isobutoxy-2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

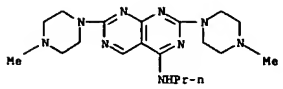


RN 5933-70-0 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 2,7-bis(4-methyl-1-piperazinyl)-4-morpholino- (7CI, 8CI) (CA INDEX NAME)

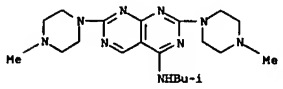
L11 ANSWER 62 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



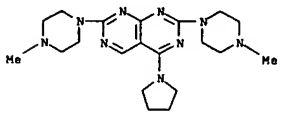
RN 5724-36-7 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 2,7-bis(4-methyl-1-piperazinyl)-4-(propylamino)- (7CI, 8CI) (CA INDEX NAME)



RN 5724-37-8 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-(isobutylamino)-2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

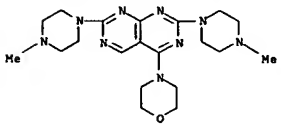


RN 5724-38-9 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 2,7-bis(4-methyl-1-piperazinyl)-4-(1-pyrrolidinyl)- (7CI, 8CI) (CA INDEX NAME)

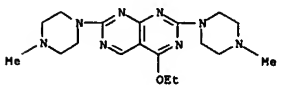


RN 5726-71-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4-ol, 2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

L11 ANSWER 62 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 6079-18-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-ethoxy-2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

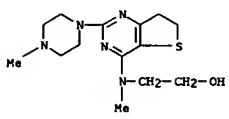


L11 ANSWER 63 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1966:43883 CAPLUS
DOCUMENT NUMBER: 64:43883
ORIGINAL REFERENCE NO.: 64:8203a-h,8204a
TITLE: Dihydrothieno[3,2-d]pyrimidines
INVENTOR(S): Woitun, E.; Ohnacker, G.
PATENT ASSIGNEE(S): Dr. Karl Thomae G.m.-b.H.
SOURCE: 37 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

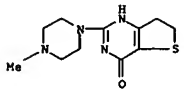
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 649347		19641216	BE	
PRIORITY APPLN. INFO.:			US	19630617

GI For diagram(s), see printed CA Issue.
AB The title compds. (I) show cardiovascular, diuretic, sedative, cytostatic, and antipyretic activity, and were made by several methods. 2-Methoxycarbonyl-3-oxotetrahydrothiophene (8 g.) was added dropwise at room temperature to a stirred solution of 18.5 g. EtSC(:NH)NH2.HBr and 13.5 g. K2CO3 in 50 ml. H2O and the mixture stirred 15 hrs. at room temperature to yield 7.5 g. I (R = EtS, R1 = OH, R2 = H) (II), m. 242-3° (EtOH). Other groups were introduced into I thus: A mixture of 7.5 g. II and 50 g. morpholine was refluxed 20 hrs., cooled, dropped into 150 ml. ether and the precipitate collected to give 5.6 g. I (R = morpholino, R1 = OH, R2 = H) (III), m. 262-5° (HCONMe2). III (3 g.) and 20 ml. POCl3 was refluxed 2 hrs., the excess POCl3 distilled in vacuo, cold H2O and 2N NaOH added to pH 8, and then extracted with CHCl3 to yield 2.5 g. I (R = morpholino, R1 = Cl, R2 = H) (IV), m. 145-6° (EtOH). A solution of 5.14 g. IV and 30 g. morpholine was refluxed 4 hrs., cooled and the precipitate collected to give 4.2 g. I (R = R1 = morpholino, R2 = H), m. 127-8° (EtOH). Similarly prepared were I (R1 = OH; R, R2, and m.p. given): EtS, 7-Me, 182-3°; pyrrolidino, 7-Me, 270-2°; Me2N, H, 294-5°; EtS, 6-Me, 210-11°; EtS, 6-Ph, 228-9°; EtS, 7-Ph, 226-8°; Ph, H, 255-6°; morpholino, 7-Me, 234-5°; 2-methylmorpholino, H, 271-3°; pyrrolidino, H, 310-11°; EtNH, H, 295-6°; iso-PrNH, H, 280-1°; Me2N, 7-Me, 250-1°; piperidino, H, 268-9°; morpholino, 6-Me, 241-3°; morpholino, 6-Ph, 245-9°; morpholino, 7-Ph, 251-3°; N-methylpiperazino, H, 258-9°. Also made were I (R1 = Cl; R, R2, and m.p. given): morpholino, 7-Me, 78-80°; pyrrolidino, 7-Me, 63-4°; Me2N, 7-Me, 38°; morpholino, 6-Ph, 147-8°; morpholino, 7-Ph, 149-50°; N-methylpiperazino, H, --; EtS, H, 75-6°; 2-methylmorpholino, H, 101-2°; pyrrolidino, H, 102-3°; Me2N, H, 98-9°; EtNH, H, 124-5°; iso-PrNH, H, 40-1°; piperidino, H, 108-9°; morpholino, 6-Me, 77-9°; Ph, H, 149-50°. Also described were I (R = morpholino; R1, R2, and m.p. given): PhCH2NH, 7-Me, 132-4°; NH2, 7-Me, 117-18°; Me2N(CH2)3NH, H, --(tri-HCl salt m. 147-9°); NH2NH, H, 166-7°; iso-PrO, 7-Me, 79-80°; morpholino, H, -- [maleate m. 134-5° (1:1)]; morpholino, 7-Me, 125-6°; CH2:CHCH2NH, 7-Me, 98-9°; Et2N, 7-Me, 50-1°; 2-methylmorpholino, H, 87-8°; piperidino, H, 108-9°; N-methylpiperazino, H, 103-4°; C6H11NH, H, 134-5°; PhNH, H, 166-7°; PhCH2NH, H, 138-9°; PhCH2(Et)N, H, 92-3°; NH2, H, 165-7° MeNH, H, 156-7°; EtNH, H, 124-5°; PrNH, H, 104-5°; BuNH, H, 84-5°; AmNH, H, 94-5°; CH2: CHCH2NH, H, 107-8°; iso-PrNH, H, 116-17°; iso-BuNH, H, 122-3°; Me2N, H, 121-2°; Et2N, H, 44-5°; Pr2N, H, 69-70°; Bu2N, H, 45-6°; (CH2: CHCH2)2N, H, 58-9°; (HOCH2CH2)2N, H, 142-3°; HOCH2CH2NH, H, 112-13°; HOCH2CH2(Me)N, H, 130-1°; 2-methylmorpholino, H, 103-4°; HOCH2CH2(Et)N, H, 129-30°; pyrrolidino, H, 169-70°; MeO(CH2)3NH, H, 79-80°; morpholino, 6-Me, 137-8°; Me2N, 6-Me, 75-6°; PrNH, 6-Me, 76-7°; pyrrolidino, 6-Ph, 112-13°; iso-PrNH, 6-Ph, 151-2°; morpholino, 7-Ph, 180-1°; Et2N, 7-Ph, 97-8°; MeO, H, 134-5°; EtO, H, 92-3°; CH2:CHCH2O, H, 101-2°; iso-PrO, H, 80-1°; PrO, H, 83-4°; BuO, H, 69-70°; iso-BuO, H, 89-90°; iso-AmO, H, 77-8°; EtOCH2CH2O, H, 82-3°; EtO, 6-Ph, 220°. Also made were I (R, R1, R3, and m.p. given): pyrrolidino, 2-methylmorpholino, 7-Me, -- (HCl salt m. 195-7°); piperidino, Et2N, H, -- (HCl salt m. 141-2°); N-methylpiperazino, EtNH, H, -- (di-HCl salt m. 288-9°); pyrrolidino, NH2NH, 7-Me, 148-9°; EtS, 4-BuNH, H, -- (HCl salt m. 260-2°); EtS, EtO, H, 62-3°; Ph, morpholino, H, 108-9°; pyrrolidino, morpholino, H, 136-7°; pyrrolidino, 2-methylmorpholino, H, 70-1°; pyrrolidino, iso-PrNH, H, 101-2°, 2-methylmorpholino, morpholino, H, 118-19°; 2-methylmorpholino, NH2, H, 165-6°; 2-methylmorpholino, EtNH, H, 108-9°; 2-methylmorpholino, CH2:CHCH2NH, H, 85-6°; 2-methylmorpholino, (HOCH2CH2)2N, H, 133-4°; Me2N, morpholino, H, 111-12°; Me2N, N-methylpiperazino, H, 54-5°; Me2N, pyrrolidino, H, 125-6°; Me2N, NH2, H, 171-2°; Me2N, EtNH, H, 101-2°; Me2N, iso-PrNH, H, 86-7°; Me2N, Me2N, H, 105-6°; Me2N, morpholino, 7-Me, 81-2°; Me2N, NH2, 7-Me, 123-4°; Me2N, Me2N, 7-Me, 78-9°; EtNH, morpholino, H, 104-5°; EtNH, PhCH2(Et)N, H, 89-90°; EtNH, EtNH, H, 116-17°; EtNH, HOCH2CH2(Me)N, H, 104-5°; iso-PrNH, morpholino, H, 90-1°; iso-PrNH, pyrrolidino, H, 110-11°; iso-PrNH, HOCH2CH2(Me)N,H, 114-15°; piperidino, (HOCH2CH2)2N, H, 117-18°; piperidino, HOCH2CH2(Me)N, H, 76-7°; piperidino, pyrrolidino, H, 91-2°; piperidino, morpholino, H, 97-8°; N-methylpiperazino, morpholino, H, 98-9°; N-methylpiperazino, PrNH, H, 108-9°; N-methylpiperazino, CH2: CHCH2NH, H, 84-5°; N-methylpiperazino, iso-PrNH, H, 80-1°; N-methylpiperazino, Me2N, H, 76-7°; N-methylpiperazino, HOCH2CH2(Me)N, H, 119-20°; Me2N, 2-methylmorpholino, H, 64-5°; Me2N, CH2: CHCH2NH, H, 86-7°; Me2N, (HOCH2CH2)2N, H, 128-9°; Me2N, HOCH2CH2(Me)N, H, 86-7°. Various formulations for pharmaceutical prepns. incorporating these I are given.
IT 4856-58-0, Ethanol, 2-[[6,7-dihydro-2-(4-methyl-1-piperazinyl)thieno[3,2-d]pyrimidin-4-yl]methylamino]- 4901-01-3, Thieno[3,2-d]pyrimidin-4-ol, 6,7-dihydro-2-(4-methyl-1-piperazinyl)- (preparation of)
RN 4856-58-0 CAPLUS
CN Ethanol, 2-[[6,7-dihydro-2-(4-methyl-1-piperazinyl)thieno[3,2-d]pyrimidin-4-yl]methylamino]- (7CI, 8CI) (CA INDEX NAME)

L11 ANSWER 63 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 4901-01-3 CAPLUS
CN Thieno[3,2-d]pyrimidin-4-ol, 6,7-dihydro-2-(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

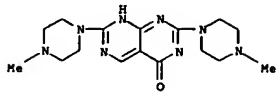


L11 ANSWER 64 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1964:9824 CAPLUS
DOCUMENT NUMBER: 60:9824
ORIGINAL REFERENCE NO.: 60:1770e-h
TITLE: 2,4,7-Triaminopyrimido[4,5-d]pyrimidines
INVENTOR(S): Thomae, Karl
SOURCE: 20 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
PATENT INFORMATION:

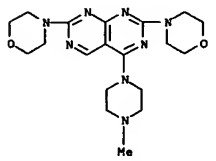
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 926696		19630522	GB	
PRIORITY APPLN. INFO.:			DE	19600215

GI For diagram(s), see printed CA Issue.
AB 2,7-Diamino-4-halopyrimido[4,5-d]pyrimidines are treated with amines to give I, where R and R' are amino groups; these compds. can be used as coronary dilators. Thus, a solution of 1.2 g. 2,7-diethylthio-4-hydroxypyrimido[4,5-d]pyrimidine in 4 ml. morpholine is heated at 130° 2 hrs. to give 1.3 g . 2 , 7-dimorpholino-4-hydroxypyrimido[4,5-d] pyrimidine (II), m. >340° (HCONMe2). II is then chlorinated to give the 4chloropyrimido-analog (III). A mixture of 1 g. III and 20 ml. morpholine is refluxed 1 hr. to precipitate 0.8 g. 2,4,7-trimorpholinopyrimido[4,5-d]pyrimidine, m. 213-14° (EtOH), 69% yield. Similarly prepared are I (R = morpholino) (R' and m.p. given): piperidino, 188-9°; pyrrolidino, 275-8°; HO(CH2)2NH, 255-6°; Et2N, 187-8°; BuNH, 303-4°; (HOCH2CH2)2N, 221-2°; PrNH, 320-2°; PhCH2NH, 265-6°; PhNH, >340°; H2NNH, 295-7°; cyclohexylamino, 345-8°; 2-methylmorpholino, 218°; isoamylamino, 303-4°; iso-PrNH, 334-5°; N'-methylpiperazino, 288° (decomposition); MeO(CH2)3NH, 265 6°; n-heptylamino, 212°; n-octylamino, 222°; n-decylamino, 228°; EtO, 218-20° (EtOH); MeO, 263-4°; PrO, 206-7°; BuO, 149-51°; EtO-(CH2)2O, 105-6° (AcOEt-petr. ether); Me2N(CH2)2O, 105-7° (PhMe-petr. ether); 2-piperidinoethoxy, 127-9°; MeS, 261° (EtOH); amylamino, 272°; n-hexylamino, 246°; benzylethyl-amino, 156-7°; Me2N(CH2)3NH, 243-5°; I (R = piperidino) (R' and m.p): piperidino, 131-2° (EtOH-H2O); morpholino, 172-3° (EtOAc); (HOCH2CH2)2N, 171-2°; BuNH, 294-6°; H2NNH, 265-7° (HCONMe2); Et2N, 93°; cyclohexylamino, 341-3° (decomposition); PrNH, 329°; Et2N,-(HCl salt m. 240-2°); I (R = pyrrolidino) (R' and m.p.): pyrrolidino, 198-9° (EtOH); piperidino, 183-4° (EtOAc); morpholino, 202-4°; HOCH2CH2NH, 315 18°; BuNH, 323-4°; PhCH2NH, 309-10°; PrNH,>350°; MEO, 216-18°; EtO, 178-9°. Also prepared are 2-piperidino-4-butylamino-7-morpholinopyrimido [4,5-d] pyrimidine, m. 295-7° (decomposition); 2-piperidino-4-pyrrolidino-7-morpholinopyrimido[4,5-d]pyrimidine, m. 231-2°; 2-piperidino-7-morpholino-4-ethoxypyrimido[4,5-d]pyrimidine, m. 176-7°; and 2-piperidino-7-morpholino-4-meth ylthiopyrimido-[4,5-d]-pyrimidine, m. 195-7°.
IT 5726-71-6, Pyrimido[4,5-d]pyrimidin-4-ol, 2,7-bis(4-methyl-1-piperazinyl)- 5726-84-1, Pyrimido[4,5-d]pyrimidine, 4-(4-methyl-1-piperazinyl)-2,7-dimorpholino- (preparation of)
RN 5726-71-6 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4-ol, 2,7-bis(4-methyl-1-piperazinyl)- (7CI, 8CI) (CA INDEX NAME)

L11 ANSWER 64 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 5726-84-1 CAPLUS
CN Pyrimido[4,5-d]pyrimidine, 4-(4-methyl-1-piperazinyl)-2,7-dimorpholino- (7CI, 8CI) (CA INDEX NAME)



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ACCESSION NUMBER: 1961:33107 CAPLUS
DOCUMENT NUMBER: 55:33107
ORIGINAL REFERENCE NO.: 55:6489c-i,6490a-i,6491a-c
TITLE: Pyrimido[4,5-d]pyrimidines. I
AUTHOR(S): Taylor, Edward C., Jr.; Knopf, R. J.; Meyer, R. F.; Holmes, Ann; Hoefle, M. L.
CORPORATE SOURCE: Parke Davis and Co., Detroit, MI
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AB A number of pyrimido[4,5-d]pyrimidines were prepared as potential diuretic agents. NaOMe (10.8 g.) in 200 cc. absolute EtOH and 50 g. O-methylisourea p-toluenesulfonate stirred 15 min., treated with 24.4 g. EtOCH:C(CN)2 in 2-g. portions, the mixture stirred 1 hr. at room temperature, refluxed 1 hr., cooled, filtered, and the residue repptd. from 100 cc. cold 2N HCl with concentrated NH4OH gave 2-methoxy-4-amino-5-cyanopyrimidine, m. 221-2° (EtOH). Formamidine-HCl (8.05 g.) and 2.5 g. Na in 100 cc. absolute EtOH stirred 15 min. at room temperature, filtered, treated with 13.6 g. methylethoxymethylenemalononitrile (I), the mixture heated 10 min. on the steam bath, and cooled gave 8.4 g. 4-amino-5-cyano-6-methylpyrimidine (II), m. 217-19° (EtOH). (H2N)2CS (7.6 g.) added to 2.5 g. Na in 100 cc. absolute EtOH, the mixture warmed to solution, cooled to 40°, treated with stirring with 13.6 g. I in small portions, heated 1 hr. on the steam bath, cooled, the precipitated Na salt dissolved in 200 cc. H2O, treated with stirring with 10 g. MeI, and filtered gave 9.4 g. 2-MeS derivative of II, pale yellow needles, m. 238-40° (EtOH). 2-Ethylthio-4-amino-5-cyanopyrimidine (III) (54.0 g.) in 177 g. PrNH2 refluxed 18 hrs. and evaporated gave 40.2 g. 2-propylamino-4-amino-5-cyanopyrimidine, m. 167-9° (EtOH). III (10.0 g.), 25 cc. 25% aqueous MeNH2, and 40 cc. EtOH heated 3 hrs. in an autoclave at 130° and cooled yielded 5.7 g. 2-methylamino-4-amino-5-cyanopyrimidine (IV). III (20.0 g.), 50 cc. PhNH2, and 2 drops concentrated HCl heated 3 hrs. at 150° and 1 hr. at 175°, cooled, suspended in 150 cc. EtOH, and filtered gave 17.3 g. 2-PhNH analog of IV, yellow solid, m. 234-5°. Similarly were prepared the following 2-substituted-4-amino-4-cyanopyrimidines (2-substituent, % yield, and m.p. given): piperidino, 25, 212-13°; 4-methylpiperazino, 49, 179°; CH2:CHCH2NH, 43, 171-2°; Me2NCH2CH2NH, 55, 179-80°; C6H13NH, 44, 134-5°; cyclohexylamino, 53, 182-3°; PhCH2NH, 57, 177-9°; o-ClC6H4CH2NH, 40, 185-7°. All the compds. were recrystd. from EtOH. IV (12.5 g.) added in portions below 30° to 40 cc. concentrated H2SO4, the mixt kept 2 hrs. at room temperature, poured into 150 g. crushed ice, filtered, the residue dissolved in 150 cc. boiling H2O, and neutralized with concentrated NH4OH gave 9.6 g. 2-methylamino-4-aminopyrimidine-5-carboxamide (V), m. 268-70°. Similarly were prepared the following 2-substituted-4-aminopyrimidine-5-carboxamides (2-substituent, % yield, and m.p. given): C6H13NH, 88°, 155° (EtOH); PhCH2NH, 62, 180-1° (EtOH); o-ClC6H4CH2NH, 71, 196-8° (EtOH); Me2N, 76, 289-90° (H2O); PhNH, 89, 246-7° (H2O); 4-methylpiperazino, 65, 222-3° (H2O). 2,4-Diamino-6-methylpyrimidine-5-carboxamide, 74%, m. 240-1° (H2O).

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2-Ethylthio-4-aminopyrimidine-5-carboxamide (20 g.) and 35 cc. H2NCH2CH2OH heated 4 hrs. at 110-15°, dild. with 100 cc. H2O, cooled, and filtered gave 12.2 g. 2-(2-hydroxyethylamino)-4-aminopyrimidine-5-carboxamide, m. 230° (H2O). 2,4-Diamino-5-cyanopyrimidine (VI) (27 g.) and 100 g. HCONH2 refluxed 0.5 hr., cooled, dild. with 100 cc. EtOH, filtered, the residue dissolved in 400 cc. hot N HCl, and repptd. with concd. NH4OH gave 15.1 g. 2,5-diaminopyrimido[4,5-d]pyrimidine-H2O, light tan, m. above 300°. Similarly were prepd. 5-aminopyrimido[4,5-d]pyrimidine (VII), 16%, m. above 360° (sublimed), and the following 2-substituted derivs. of VII (2-substituent, % yield, and m.p. given): Ph, 25, above 300° (EtOH); 4-methylpiperazino, 70, above 300° (EtOH); piperidino, 29, above 300° (EtOH); Me2NHCl.H2O, 58, above 300° (H2O); PhCH2NH, 7, 285-7° (EtOH); C6H13NH, 23, 276-8° (EtOH); MeS, 19, above 300° (sublimed). H2NC(:NH)NH2.HCl (VIII) (9.6 g.), 13.5 g. VI, and 5.4 g. NaOMe in 200 cc. Ethyl Cellosolve refluxed 20 hrs. with stirring, filtered, the crude residue (16.5 g.) washed with 100 cc. warm H2O, and recrystd. from 600 cc. H2O contg. 20 cc. concd. HCl gave 9.1 g. 2,4,7-triaminopyrimido[4,5-d]pyrimidine, m. above 300°. Similarly were prepd. the following 7-substituted derivs. of 2,4-diaminopyrimido[4,5-d]pyrimidine (7-substituent, % yield, and m.p. given): H, 78, above 300° (H2O); MeNH-HCl.0.5H2O, 35, above 300° (H2O); PrNH, 92, 309-10° (EtOH); C6H13NH, 72, 272-3° (EtOH); HOCH2CH2NH, 33, above 300° (H2O); Me2N, 61, above 300° (EtOH); piperidino, 50, above 300° (Ethyl Cellosolve); (HOCH2CH2)2N, 74, 285° (EtOH); PhCH2NH, 73, 294-5° (EtOH); PhNH, 78, above 300°; H2NNH, 88, above 300° (H2O); EtS, 40, above 300° (Ethyl Cellosolve); Ph, 94, above 300° (Ethyl Cellosolve); Me, 74, above 300° (H2O). PhC(:NH)NH2.HCl (15.5 g.) and 18.0 g. III refluxed 24 hrs. with stirring with 5.4 g. NaOMe in 200 cc. abs. EtOH, refluxed 24 hrs. with stirring, filtered hot, evapd., and the residual gum treated with 100 cc. H2O gave 4.6 g. 2-phenyl-4-amino-7-ethylthiopyrimido[4,5-d]pyrimidine (IX), m. 226-8° (EtOH). MeC(:NH)NH2.HCl (9.5 g.) and 18.0 g. III refluxed 24 hrs. with 5.4 g. NaOMe in 200 cc. abs. EtOH gave similarly 5.5 g. 2-Me analog of IX, m. 279-80° (Ethyl Cellosolve). 2-Methylamino-4-aminopyrimidine-5-carboxamide (9.6 g.) and 25 cc. HCONH2 refluxed 0.5 hr., cooled, dild. with 75 cc. EtOH, and filtered gave 5.7 g. 2-methylamino-5-hydroxypyrimido[4,5-d]pyrimidine, m. above 300° (glacial AcOH). Similarly were prepd. the following 2-substituted-5-hydroxypyrimido[4,5-d]pyrimidines (2-substituent, % yield, and m.p. given): PrNH, 72, 295-6° (AcOH); CH2:CHCH2NH, 58, 278-80° (H2O); Me2N, 28, above 300° (AcOH); o-ClC6H4CH2NH, 71, above 300° (AcOH); PhNH, 23, above 300° (AcOH). V (100 g.) in 500 cc. HC(OEt)3 refluxed 3 hrs., concd., and cooled gave 81 g. 2-ethylthio-5-hydroxypyrimido[4,5-d]-pyrimidine, m. 244-6° (glacial AcOH). 2,4-Diaminopyrimidine-5-carboxamide (14.0 g.) and 100 cc. (EtCO)2O refluxed 1 hr., cooled, and filtered gave 18 g. 2-ethyl-4-hydroxy-7-propionylaminopyrimido[4,5-d]pyrimidine (X). The X refluxed 1 hr. with 3.5 g. NaOH in 200 cc. H2O, cooled, and filtered gave 9.5 g. 7-NH2 analog (XI) of X, m. above 330° (glacial AcOH). Similarly was prepd. with (PrCO)2O the Pr analog of XI, 52%, m. above 300° (EtOH). In the same manner were prepd. with Ac2O the 2-Me analog (XII) of XI, 78%, m. above 300° (AcOH), the Am analog, 35%, m. 295-300° (50% aq. EtOH), with (AmCO)2O, and the 5-Me deriv. of XII, 74%, m. above 300° (AcOH), with Ac2O. In the same manner were prepd. with Ac2O the following 7-substituted 2-methyl-4-hydroxypyrimido[4,5-d]pyrimidines (7-substituent, % yield, and m.p. given): HOCH2CH2NH, 44, above 300° (H2O); PrNH, 18, 294-5° (EtOH); C6H13NH, 23, 267-8° (EtOH); Me2N, 26, 275-6° (EtOH); PhCH2NH 62, above 300° (AcOH); PhNH, 62, above 300° (EtOH); EtS, 75,

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247-8° (EtOH); Me, 72, 310-15° (MeOH); MeS, 57, 288-90° (MeOH). Powd. VIII (30 g.) and 16.8 g. NaOMe in 200 cc. abs. EtOH stirred 0.5 hr. at room temp., filtered, cooled to 5-10°, treated dropwise with 2-ethylthio-4-chloro-5-carbethoxypyrimidine, the mixt. stirred 2 hrs. at room temp., concd. in vacuo, added to 150 cc. warm H2O, filtered, and neutralized with glacial AcOH gave 18.2 g. 2-amino-4-hydroxy-7-ethylthiopyrimido[4,5-d]pyrimidine (XIII), m. above 300° (glacial AcOH). XIII (5 g.) in 20 cc. 25% aq. MeNH2 and 30 cc. H2O heated 4 hrs. in an autoclave at 140° and cooled gave 3.5 g. 7-MeNH analog of XIII, m. above 300°. 2-Benzylamino-5-hydroxypyrimido[4,5-d]pyrimidine (14.2 g.) and 13.6 g. P2S5 in 130 cc. C5H5N refluxed 4 hrs., cooled, and filtered gave 12.0 g. 2-benzylamino-5-mercaptopyrimido[4,5-d]pyrimidine (XIV), bright yellow, m. 290-1° (EtOH); the filtrate dild. with 200 cc. H2O gave an addnl. 3.2 g. XIV. XIV (5 g.), 10 cc. PrNH2, and 50 cc. EtOH heated 4 hrs. at 140° in an autoclave gave 1.7 g. 5-PrNH analog of XIV, m. 290-1° (EtOH). 2-Ethylthio-5-hydroxypyrimido[4,5-d]pyrimidine (XV) (100 g.), 110 g. P2S5, and 500 cc. C5H5N refluxed 3 hrs. with stirring, evapd. in vacuo, the residue dissolved in 1 l. 5% aq. NaOH, and pptd. with AcOH gave 112 g. golden yellow 5-MeNH analog (XVI) of XV, m. 280-3° (EtOH). Similarly were prepd. 2-methylthio-5-mercaptopyrimido[4,5-d]pyrimidine (XVII), 75%, m. 290-7° (C5H5N), and the 7-Me deriv. (XVIII) of XVII, 28%, darkened at 260° (MeOH). XVI (12.5 g.) and 14 g. 25% aq. MeNH2 in 300 cc. H2O refluxed 0.5 hr. and cooled gave 2.65 g. 2-ethylthio-5-methylaminopyrimido[4,5-d]pyrimidine (XIX), m. 275-80° (iso-PrOH). XIX (1 g.) and 30 cc. EtOH (satd. with NH3) heated 5 hrs. at 135° in an autoclave gave 0.5 g. 2-amino-5-methylaminopyrimido[4,5-d]pyrimidine, m. above 330° (aq. EtOH). XVIII (0.4 g.) and 15 cc. 7.5% aq. Na2CO3 heated to 35-40°, treated with 0.5 cc. Me2SO4, stirred until homogeneous, and refrigerated overnight gave 0.32 g. 2,5-bis(methylthio)pyrimido[4,5-d]pyrimidine (XX), m. 183-5° (sublimed). XX (0.07 g.) in 8 cc. abs. EtOH stirred 15 hrs. at room temp. gave 0.075 g. 5-PhCH2NH analog of XX, m. 278-80° (50% EtOH). By the same method as XIX were prepd. the following 2,5-disubstituted-pyrimido[4,5-d]pyrimidines (2- and 5-substituents, % yield, and m.p. given): PhCH2NH, CH2:CHCH2NH, 41, 274-5° (EtOH); EtS, PhCH2NH, 35, 231-2° (iso-PrOH); EtSH, furfurylamino, 52, 219-20° (iso-PrOH); EtS, PhNH, 32, 250-5° (EtOH). With HC(OEt)3 and Ac2O was prepd. 2-methylthio-5-hydroxypyrimido[4,5-d]pyrimidine, 72%, m. 225-9° (H2O).

IT 114930-73-3, Pyrimido[4,5-d]pyrimidine, 5-amino-2-(4-methyl-1-piperazinyl)-
(preparation of)

RN 114930-73-3 CAPLUS
CN Pyrimido[4,5-d]pyrimidin-4-amine, 7-(4-methyl-1-piperazinyl)- (9CI) (CA INDEX NAME)